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Original Articles.

REPORT OF A CASE OF ANTENATAL INTESTINAL OBSTRUCTION, WITH SOME REMARKS ON OTHER FORMS OF INTESTINAL OBSTRUCTION IN INFANTS.

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THE following case, owing to its comparative rarity and interesting clinical features, appears to us to be worth recording. The infant's mother (a patient in the City of London Maternity Hospital) was under the care of Mr. Comyns Berkeley, to whom we are indebted for permission to publish this record.

Mrs. C—, aged 34 years, 11-gravida, was delivered of a full-time female infant at 3 a.m. on February the 29th, 1920.

Obstetrical history.—Previous labours, 9 (date of last, January, 1919). Miscarriages, 1 (1909, at three months). Complications and interesting features connected with previous pregnancies and labours: (1) Pregnancies—triplets, full term 2 (1, ? fœtal ascites). (2) Labour, ninth, February, 1918, normal; child imperforate anus. Admitted to London Hospital: no operation; died a few days later. Labour, tenth, albuminuria (revealed and concealed ante-partum hæmorrhage; child stillborn; no post-mortem).

Details of this confinement.—Child born February the 29th at 3 a.m.; first vertex presentation; first stage 4 hours 30 minutes, second stage 30 minutes, third stage 15 minutes. Placenta 2 lb. 6 oz., expelled by expression, and intact. Œdema of fœtal surface. Hydramnios, five pints.

The child.—Full time, weight 8 lb. 1 oz.; cord 26 inches. Head measurements: Circumference, 14; O.F., $4\frac{1}{4}$; S.O.F., 4; S.O.B., $3\frac{1}{2}$; V.M., 5; Bi.P., $3\frac{1}{2}$; Bi.F., $2\frac{3}{4}$.

At birth the child was found to have marked abdominal distension, but otherwise appeared to be normal. The abdominal distension was not sufficient to complicate labour.

Progress of the case.—She was seen by one of us (S.A.O.), for the first time, at 2.30 p.m. on March the 1st, when the following notes were made:

A well-nourished infant, who lies perfectly placid and is in no distress whatever. Temperature 95·8° F.; pulse and respirations normal: "Has vomited a greenish fluid, probably meconium, twice since birth, and the bowels have expelled a plug of mucus."

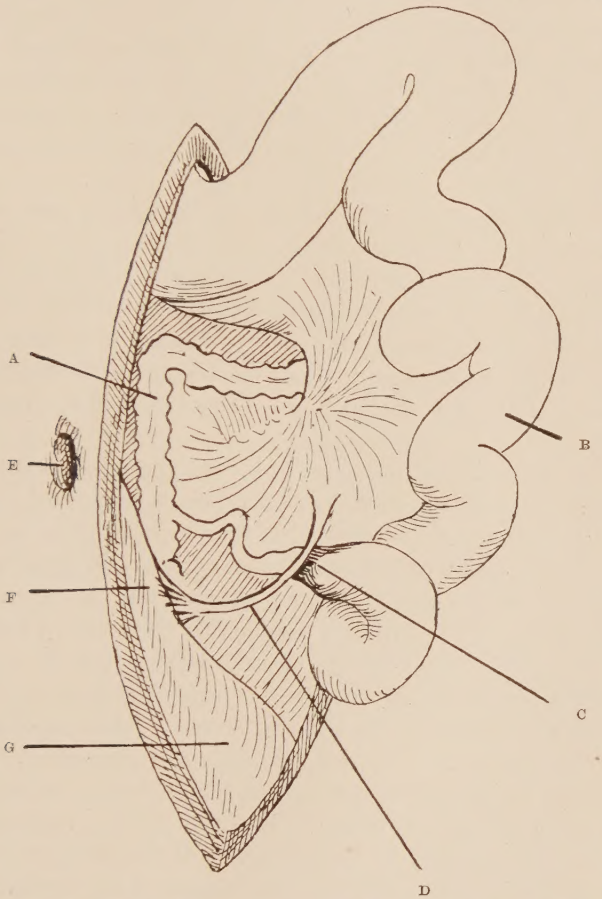
The tongue is furred. The abdomen is markedly distended. The superficial abdominal veins are conspicuous. There is visible peristalsis and distended coils of intestine can be felt. There is no evidence of free fluid in the abdomen. Heart and lungs normal. The child has passed urine naturally. No enlargement of liver or spleen. On rectal examination the anal canal and rectum are empty and the gut appears to end blindy at the limit of reach of the little finger.

Diagnosis.—Intestinal obstruction, due probably to atresia of the colon.

The child was immediately transferred to the Queen's Hospital for exploratory laparotomy, which was performed at 6 p.m. the same day. At a second rectal examination (N.L.) the anal canal and lower part of the rectum were found to be of about normal size. Just above the junction of the pelvic colon and rectum the calibre narrowed, so that the tip of the little finger jammed tight. On withdrawing the finger there was present a very tenacious, cream-coloured material, obviously the contents of large intestine minus bile-pigment.

Operation.—Mid-line incision, skirting the umbilicus. Enormous coils of small intestine, quite the size of the adult jejunum, escaped with a small quantity of clear fluid as soon as the peritoneum was opened. A rapid survey of the intestine showed the obstruction to be about one foot above the ileo-cæcal valve (see diagram), and due to a

band arising from the mesentery and descending to the upper surface of the bladder, where it appeared to blend with the urachus and so passed up to the umbilicus. There is little doubt that it was the remains of the vitelline artery of the embryonic circulation coming



A. Diminutive large intestine. B. Distended small intestine displaced to left. C. Linear band of gangrene. D. Strangulating band from mesentery to umbilicus. E. Umbilicus. F. Urachus. G. Bladder.

as a branch from the superior mesenteric. There was no diverticulum of the bowel. Upon dividing the band the underlying portion of the bowel was found to have a linear band of gangrene, with mucosa exposed. This was over-sewn. Between this point and the ileo-cæcal valve the intestine gradually narrowed down and lost the meconium (bile) staining. The large intestine was entirely

diminutive and cream-pink in colour, and as far as it could be determined it was patent. The most distended coil of small intestine was punctured and a large quantity of gas and meconium liberated. The puncture was over-sewn. The abdomen was sewn up without drainage with through-and-through fishing-gut sutures.

The child stood the operation well, but a few hours later definitely fæcal vomiting set in and continued up to the time of death, which occurred on March the 2nd in the early hours of the morning.

Only a partial post-mortem examination was allowed. It was ascertained beyond doubt that the entire gut below the site of obstruction was pervious.

Remarks.—(*a*) *From the obstetrical standpoint* the case is interesting, the association of hydramnios with fœtal abnormalities being well known. The degree of distension was not sufficient to obstruct labour—a complication which occasionally is met with in these cases. From the state of the bowel found at operation it is easy to understand how rough manipulations during labour or deep palpation of the abdomen after birth would be accompanied by rupture and peritonitis.

(*b*) *From the medical standpoint* the case presents several features of interest: (1) Though of rare occurrence, this type of case is well known. (2) The intestinal obstruction must have occurred *in utero*, the child being born with signs of obstruction, *i. e.* great abdominal distension, whilst the symptoms of obstruction rapidly manifested themselves by vomiting and the absence of the normal bowel movements. How long the obstruction antedated birth it is impossible to say. Had delivery been delayed a few more hours, would spontaneous rupture of the bowel have occurred? The etiology of this case is not a mystery. (3) The well-being of the child, even when seen thirty-six hours after delivery, was remarkable. It would appear that even acute intestinal obstruction in the child's prenatal existence need not be accompanied by symptoms. (4) It seems to support the view that the vigorous peristaltic movements of the bowel commence only after birth. (5) Had spontaneous rupture, followed by peritonitis and the concomitant accumulation of free fluid, occurred prior to birth, the diagnosis of fœtal ascites would have been made in all probability and with justification, the association of hydramnios and fœtal ascites being not so very uncommon.

(*c*) *From the surgical standpoint* the chance of a successful issue in such cases is very remote, for the inactivity of the diminutive undeveloped large intestine can probably not be overcome, and so a condition of relative obstruction remains even after division of the

band. A mere enterostomy (itself a serious operation in a newly-born child), while relieving the immediate urgency, would be no more successful, as it would relieve the colon of all functional activity and so of its one chance of developing.

The literature relating to defects of the intestine—anatomical, congenital or pathological—is voluminous. The following references, of more recent date, to the writings of others may be interesting to the readers of this Journal.

(1) Blacker and Birnbaum ('Malformations and Congenital Diseases of the Fœtus,' 1912, p. 167). Complete absence of the intestine is very rare. Grave defects of the intestine have nearly always been associated with other severe malformations. Doubling of one portion occurs very rarely.

Partial defects are commoner, *e. g.* the vermiform appendix may be absent, or the continuity of the intestine may be interrupted for a longer or shorter distance. In David's case the child died three days after birth with symptoms of acute ileus. At the post-mortem there was complete occlusion of the descending colon and the greatly distended colon had perforated in the region of the cæcum. Completely separated portions of intestine have been found in umbilical hernia, with corresponding defects in the bowel. (Tillmanns quotes a case observed by Ahlfeld.)

Congenital contractions, stenoses, occlusions, atresiæ of the intestine are very uncommon (atresia ani, of course, excepted). They are most frequent in the duodenum where the bile-duct and duct of Wirsung enter or at the union of duodenum and jejunum.

Occlusion is commoner than stenosis. Cordes records 57 cases—48 of occlusion and 9 of stenosis. Ducros collected 3 cases of stenosis, 5 of obliteration of the lumen and 3 of complete interruption at the point of union of duodenum and jejunum. Voron, among others, records a case of congenital atresia of the duodenum. The child died on the fourth day. A few minutes after beginning to suck the child invariably vomited unaltered and non-coagulated milk without any bile. At the post-mortem occlusion of the duodenum was found. The lower end of the upper blind sac became lost in the tissues at the head of the pancreas. The bile and pancreatic secretions entered into the lower sac.

Kuliga records a case of hour-glass stomach with multiple stenoses of the small intestine. In the ileum the commonest situation is just above the ileo-cæcal valve, or at a point corresponding to the origin of the omphalo-mesenteric duct. The occlusion is generally of a membranous, septum-like character.

In a case described by Nijhoff delivery was difficult owing to the great distension of the abdomen, associated with perforation of the intestine and escape of meconium into the abdominal cavity which had occurred before birth.

Congenital stenosis and atresiæ of the large intestine are most common in the region of the sigmoid flexure. In Brindeau and Moncany's case the transverse colon was stenosed for a length of 15 cm. The symptoms of ileus were present and an artificial anus was made. The child died forty-eight hours after operation.

Jeannin and Cathala record a case in a newborn child of complete atresia of the colon. The bowel had perforated.

(2) George Waugh ('Lancet,' 1912, i, p. 427) records a case of successful enterectomy, under spinal anæsthesia, for acute ileus in an infant twenty-four hours old. The obstruction occurred in a congenital hernia of the cord. The sac, the size of a child's head, with a narrow pedicle at the umbilicus, contained several coils of small intestine adhering by a short Meckel's diverticulum to the apex of the sac. Six inches of intestine were resected and a lateral anastomosis performed. The child made a satisfactory recovery, but died one month later of marasmus.

(3) "Congenital Intestinal Atresia," H. S. Clogg ('Lancet,' 1904, p. 1770). This author records two cases. (*a*) A female infant, six days old, was born with a prominent navel. Since birth nothing had been passed *per rectum*. Vomiting commenced shortly after birth and persisted, latterly becoming dark brown and very offensive. On examination a congenital umbilical hernia, about 3 in. in diameter, was found to be present. At the operation the intestine was found to end blindly in the sac. The large intestine commenced again just below the hepatic flexure of the colon. (*b*) In a male infant, aged 4 days, atresia of the small intestine was found. The child commenced to vomit shortly after birth and the vomit became very offensive. The abdomen was distended and nothing had been passed *per rectum*. At the operation the lower end of the ileum ended blindly, and was continued on as an impervious cord, about ½ in. in length, into a much contracted large intestine. The obstruction was about 2 in. above the cæcum. Death occurred a few hours after operation. No post-mortem was obtained.

This paper deals very fully with similar conditions and contains thirty-two references to the literature :

(4) "Congenital Intestinal Obstruction," N. T. Spriggs ('Lancet,' 1910, i, p. 94). This author gives details of seven cases and gives twenty-two references to the literature.

Case 1.—A septum in the ileum in an infant, aged 5 days. The post-mortem examination showed a complete septum a few inches above the ileo-cæcal valve. It was covered by mucous membrane on either side. All the gut below was contracted and very small. There was no meconium below the obstruction.

Case 2.—In an infant, aged 1 day, the small intestine at the post-mortem ended blindly 29 in. below the pylorus. There was no other abnormality. Laparotomy had been performed and the child lived ten days.

Case 3.—In an infant, aged 4 days, the post-mortem revealed an ileum which terminated abruptly ¾ in. above the cæcum.

Case 4.—In an infant, aged 4 days, there was atresia of the bowel (ileum) 39 in. below the pylorus.

Case 5.—In an infant, aged 5 days, there were multiple atresiæ of the jejuno-ileum. Reference is made to a similar case reported by Emanuel (British Journal of Children's Diseases, 1905, ii, p. 457).

Case 6.—Atresia of the duodenum in an infant, aged 3 weeks, who died on the day of admission to hospital. There was a history of vomiting since birth, about ten minutes after food, and of progressive wasting. The vomit was considerable in quantity, with much green mucus. The bowels had acted, only meconium being passed. At the post-mortem the duodenum ended abruptly at the point of entry of the bile-duct. The stricture was complete.

Case 7.—In an infant, aged 39 hours, where laparotomy was performed and a Paul's tube only inserted, the obstruction was due to an abnormal arrangement of the mesentery.

The post-mortem showed: "The mesentery was absent from the last 1½ in. of the ileum and this and all the large intestine were retro-peritoneal."

(5) *Volvulus of the entire small intestine* is rare. J. Hutchinson, Jun. ('Clinical Journal,' 1907, xxx, p. 113), in a paper entitled "On Volvulus of the Entire Small Intestine, Cæcum and Ascending Colon," refers to two cases occurring in infants.

Case 1.—Infant, aged 4 days (Epstein-Soyka, 'Präger med. Wchnschr.,' 1878). The symptoms in this case were constant vomiting, with blood mixed with fluid stools. The upper part of the abdomen was much distended, and obstructed coils of intestine could be felt beneath the abdominal wall. Post-mortem: "A complete volvulus had occurred from right to left. . . . The cæcum and ascending colon had their mesentery continuous with that of the small intestine."

Case 2.—Infant, aged 19 days (Pescatore, 'Deutsche Zeitschr. f. Chir.,' Bd. lxviii). At the post-mortem a balloon-like viscus was found just below the ensiform cartilage. This was an abnormally distended duodenum which contained five times as much fluid as the stomach. Below the duodenum a complete axial rotation of the small intestine had occurred one and a-half times from right to left.

Remarks (Hutchinson).—The invariable condition for a complete volvulus is the floating condition of the cæcum and ascending colon. This is due to congenital arrest of development (Legueu, 8 per cent. infants; Tuffier, 2 per cent. adults; Wandel, 10 per cent.).

(6) Intestinal obstruction, due to Meckel's diverticulum in one or other of its forms, is perhaps one of the commoner forms met with in patients at any age. An illuminating paper has been written by Daniel N. Eisendrath on this subject, entitled "Ileus due to Meckel's Diverticulum" ('Annals of Surgery,' 1909, l, p. 1278).

This writer discusses at length the causes, types and anatomy of Meckel's diverticulum.

The persistence of the umbilical vessels in connection with Meckel's diverticulum is of particular interest in relation to the case here reported. Eisendrath classifies the varieties as follows (*vide* 'Medical Annual,' 1911, p. 400): (1) A complete canal opening at the umbilicus at one end and into the ileum at the other—comparatively rare. (2) A canal opening at the umbilicus, but ending blindly at a variable distance within the abdominal cavity. (3) An intermediate portion of the duct remains, having no communication externally at the umbilicus or internally into the gut, but forming a cystoma due to retention of secretion. Such a cystoma may have a ligament attaching it to the gut. (4) The tube is limited to the proximal end of the canal opening into the ileum. (The condition first described by Meckel in 1812.) (5) The cord containing the umbilical vessels may persist as an independent structure and be attached to the umbilicus separately. This vascular cord may either take an independent course, or the vessels may run along the free border of the mesenteriolum of the diverticulum, or finally they may run from the tip of the diverticulum and form a cord, commonly known as the terminal ligament. . . . The normal point of fixation of the diverticulum or its terminal ligament is at the umbilicus. The frequency of this attachment to the umbilicus varies. (6) The diverticulum may be either absent or very rudimentary, and the only evidence of the presence of a congenital condition be a cord (containing umbilical vessels or traces of them) extending from the mesentery to the umbilicus.

This is the type which appears to resemble most closely the condition found in our patient.

Some of the difficulties encountered in the diagnosis of intestinal obstruction, actual or suspected, are well illustrated in the following series of cases, hitherto unpublished, which have come under the observation of one of us (S.A.O.).

Case 1: *Summary.*—Severe toxæmia, of unknown origin, simulating duodenal obstruction in an infant, aged 5 days. Laparotomy; death.

History.—Born healthy. Since birth has vomited everything a few minutes after taking it. Bowels have acted twice, but meconium only passed.

On examination.—A fairly well-nourished, fully-developed infant. Slight, but generalised, icteroid tinge. No signs of collapse, but the abdomen is distended. No peristalsis seen, and no mass felt. Rectal examination negative. Slight fever (100° F.).

Exploratory laparotomy.—Stomach large; all the rest of the intestines collapsed and very small. The duodenum (second part) appeared to be stenosed.

After operation.—Patient became more jaundiced and developed hæmorrhages into the skin and mucous membrane. Died twenty-four hours later.

Post-mortem.—Hæmorrhage into the peritoneum; purpuric extravasations under liver-capsule. All organs appear macroscopically healthy. No organic change in the duodenum.

Case 2: *Summary.*—A case of persistent vomiting in a male infant, aged 10 weeks; post-mortem a peritoneal band which occludes the duodenum near its lower end.

History.—November the 17th: The child has been vomiting for the last three weeks and losing weight for five. Occasionally vomiting is in relation to time of taking food. Sometimes he appears to vomit much more than he takes. At other times he vomits two or three hours after taking the breast.

Present state.—November the 17th. Thin, wasted, ill; tongue furred. Heart and lungs negative. There is no visible peristalsis. The pylorus cannot be felt. Liver palpable. Spleen not felt. The abdomen is soft and not at all distended. No tenderness. November the 17th: Vomited seven times. November the 18th: Vomited seven times (bile-stained fluid several times). Weight, 7 lb. November the 19th: Vomited nine times, occasionally immediately after feeding, at others after one hour or more; is very collapsed. November the 20th: No vomiting. November

the 21st: Vomited three times. Weight, 7 lb. 3 oz. November the 22nd: Very ill and collapsed. Vomited five times. November the 23rd: Vomited eight times. November the 24th: Did not vomit. November the 25th: Vomited three times. Weight, 6 lb. 15 oz. November the 26th: Vomited twice. November the 27th: Temperature, 93·8° F. (rectal). Very pale and collapsed. Pulse very feeble. Vomited once. Fontanelle depressed. November the 28th: Slight peristalsis noticed for the first time. The patient died during the night. Temperature throughout for the most part subnormal (mostly 96°–98° F.; on two occasions 93·8° and 94·2° F.). Pulse, 96–156; respirations, 28–56. Bowels acted daily, one to four times.

Permission to perform exploratory laparotomy was refused, and considering the general condition of the child was not insisted upon. Under the existing conditions it was impossible to carry out a bismuth meal.

Post-mortem.—A peritoneal band (? acquired or congenital) was found to be blocking the lower end of the duodenum. The duodenum was almost as large as the stomach. Nothing else abnormal was found.

Case 3: *Summary.*—A case of partial volvulus of the small intestine in a male infant, aged 5 weeks.

History.—Taken ill June the 17th with vomiting. No action of the bowels. Had been fed on Glaxo. Family history negative. When first seen, June the 20th, the child was very ill, with earthy colour and abdominal aspect, sunken eyes, and depressed fontanelle. He cries continuously as if in pain. Abdomen is distended and tense, the percussion note resonant all over. Heart and lungs are normal. The neck muscles are rigid with variable rigidity of the lower limbs. Kernig's sign is positive. Plantar response is of the infantile type. Lumbar puncture; nothing abnormal. Later the child vomited a large amount of brown, almost fæcal material. Temperature, 99·2° F.; pulse, 136; respirations, 56. Laparotomy was contemplated, but owing to the child's desperate condition was not performed. The child died on the 21st.

Post-mortem.—Volvulus of small intestine near the ileo-cæcal junction. It involves 1½ in. of bowel. The affected bowel is purplish, the coils being matted together by recent adhesions. Small intestine large and full of gas. Large intestine empty.

Case 4: *Summary.*—A case of intestinal obstruction in a male infant 5 weeks old, due to a large hæmorrhage into the wall of the gut. Streptococcal peritonitis. Laparotomy; death.

History.—A full-term breast-fed child, 6½ lb. at birth. On June the 3rd noted "to be queer." "Eyes rolled," but no convulsions. On June the 5th condition changed. He passed a hard, yellow motion in the evening and seemed to be in much pain. For the last twenty-four hours mother has noticed distension of abdomen. There has been no action of the bowels since the evening of the 5th. Has only vomited once. Bowels opened twice daily until the 5th and motions said to be normal. He takes the breast well despite his condition.

Present state.—Middle day, June the 6th, very ill, face drawn and pinched. Heart and lungs normal. Abdomen much distended, rigid, no movement. Dulness in the flanks. Rectal examination, *nil.* Temperature 98° F.; pulse, 160; respirations, 40.

Exploratory laparotomy.—Midline incision. A large amount of thin, green, yellow, flaky pus. All the intestines purplish. One large hæmorrhagic looking area was discovered in the wall of the lower end of small intestine. This was tense and immobile, and on incising the peritoneal coat of the gut was found to be a large clot in the wall of the bowel which had completely obstructed the intestine. The clot was evacuated and the peritoneum repaired. Toilet of peritoneum with drainage. During the operation the child vomited a large amount of dark material with fæcal odour. The child died the same night.

Post-mortem.—General peritonitis (cultures showed *Streptococcus fæcalis*). In addition to the one massive hæmorrhage obstructing the gut-wall found at operation there were four others of a similar character though smaller in size.

Case 5: *Summary.*—A case of torsion of the left ovarian pedicle in a femoral hernia in a female infant, aged 6 months. Operation; recovery.

History.—First seen December the 8th. At 7 a.m., December the 6th, mother noticed a small lump, the size of a hazel nut, in the left groin, which she could not reduce. The lump increased in size. The child had been poorly for the last two days and cried continuously. For two nights prior to the lump being noted the baby had been restless. Bowels acted on the 6th, 7th, 8th, normal motions. Only vomited once on the 7th.

Past history.—Has had a rupture three months, which "comes and goes." Until now this could always be reduced. This rupture seemed higher in the groin than the present lump. The child had a severe cough with much straining one month ago. Her health has never been really satisfactory since birth. Nine other children. No features of clinical interest.

Present state.—When first seen temperature 101° F.; pulse rapid, regular. The child is pale and puny and cries continuously. There is a mass, the size of a small pigeon's egg, in the left inguino-femoral region. It invades the left labium. It is almost impossible to say whether it is primarily inguinal or femoral. It is mobile and apparently can be partially reduced. There is no fluctuation. The overlying skin is normal. An attempt to reduce under an anæsthetic failed.

Operation.—Sir Cuthbert Wallace (December the 8th).—Torsion of the left ovarian pedicle was found. The ovary itself was a dark purplish-red colour with glistening surface. There was no evidence of gangrene. The ovary with its pedicle was amputated close to the uterus. The femoral sac contained no bowel. The femoral canal was repaired. The child stood the operation well and made an uninterrupted recovery.

I am much indebted to Sir Cuthbert Wallace for permission to publish this case.

HEREDITARY SYPHILITIC AORTITIS.

By E. J. Stolkind, M.D.

The question of hereditary syphilitic aortitis has not only a theoretical but also a practical interest. But so far many questions await answer, and further investigations are necessary. Recent researches, especially the discovery of *Spirochæta pallida* and the careful pathological study of the cases of aortitis, have thrown much light on this subject.

Spirochætæ pallidæ in the blood-vessels and heart have been found in many cases of hereditary syphilis in prematurely born and still-born infants, as well as in those who died soon after birth.

For example, Ranke found *Spirochætæ pallidæ* in the cerebral blood-vessels and in the brain in nine out of twelve cases examined by him. In the blood-vessels and the heart they were found by Rach and Wiesner in four newborn (in the smallest vessels); by Rebaudi in five fœtuses (in all the coats of the aorta and very often in the vasa vasorum); by Frohwein in three prematurely born (very few in the aorta and very many in the liver); by Buschke and Fischer in a three weeks old baby (in some blood-vessels and in the heart, in which interstitial myocarditis was noticed); by Cesa-Bianchi in twenty cases (in the large vessels, heart muscle and in the blood); by

Sabrazes and Dupérié in a ten days old infant (in the aorta, myocardium and pulmonary artery); by Landouzy and Laederich in an infant, aged 10 weeks (in the suprarenal glands and in the cutaneous eruption); by Warthin and Snyder in two infants, aged 2 months and 8 days respectively (in the myocardium); by Simmonds in thirteen cases; by Mallory and others.

So far I have not been able to find in the literature any cases in which *Spirochætæ pallidæ* have been found in the aorta of children with hereditary syphilis, aged more than one year. It may be noticed here that some authors, such as Reuter, Wright, Richardson, Mallory, Warthin, Schmorl and Longcope, have reported cases of aortitis in adults with acquired syphilis in which cases they discovered *Spirochætæ pallidæ* in the wall of the aorta.

Thus, this point—the presence of *Spirochætæ pallidæ* in the wall of the aorta of children with hereditary syphilis aged more than one year—needs further investigation.

The same applies to the pathological lesions in the aorta in cases of hereditary syphilis. Barlow (1877) was one of the first English authors who described syphilitic changes in the blood-vessels in hereditary syphilis (a case of choroiditis and arteritis of the cerebral vessels in an infant of nearly seven months old).

Similar cases were also described by Schütz (in a fœtus); by Chiari (endarteritis in an infant, aged 15 months); by Fournier, Comby, Marchiafava and others.

Fenomenov, Durante, Sanné and others have described cases of aneurysm of the aorta in the fœtus. Mracek in his monograph reported twenty-four cases of syphilitic changes in the heart of the newborn. In only one of these cases lesions were found in the aorta.

Pathological changes in the aorta, large vessels and pulmonary artery in newborn infants with hereditary syphilis have been described by Wiesner and Rach, as well as by Wiesner (37 cases); by Bruhns (9 cases); Klotz, Waterman (1 case each); Rebaudi (13 cases); Lévy-Franckel (5 cases); Cesa-Bianchi, Debove and Trémolières, Hennig, Haselbach and others.

The morbid changes of the large blood-vessels in fœtuses and stillborn generally consist in the formation of cellular infiltrations in the media, and partly in the adventitia and in hyperæmia of the vasa vasorum. In infants who had lived some weeks there was found a partial or complete obliteration of the vasa vasorum in the media and adventitia and a growth of interstitial tissue. The infiltrations consisted of lymphocytes, of mononuclear and polynuclear leucocytes, epithelioid cells and interstitial tissue.

According to Rach, Wiesner and others, these pathological changes are specific and produced by syphilitic infection, which generally causes early death.

Contrary to the opinion of these authors, Thorel and Scharpff, after examination of four syphilitic fœtuses, in which they had not found the same pathological changes, came to the conclusion that such vascular lesions are not specific of hereditary syphilis.

Thus writers so far are not agreed as to the typical pathological changes of hereditary syphilis in the aorta of fœtuses and newborn infants, and this question needs further investigation. On the other hand the lesions of syphilitic aortitis in adolescents and adults are characteristic.

Of greater practical interest for every physician is the question, if hereditary syphilitic aortitis really exists in older children, adolescents, and especially in adults, is it possible to diagnose it clinically ?

As such cases are described in literature, many authors now admit the existence of such cases ("aortisme héréditaire" of Huchard and others).

But so far none of the cases described as hereditary syphilitic aortitis in older children, adolescents and adults has been proved. Every physician who has observed cases of syphilitic aortitis, with a subsequent autopsy, knows how difficult it is to diagnose it clinically, and especially syphilitic aortitis or aortic regurgitation or stenosis due to hereditary syphilis.

In one of my cases, a child, aged 10 years, with aortic stenosis, the heart disease was diagnosed in infancy.

The mother gave a history of two abortions. There was a suspicion of congenital heart disease of syphilitic origin, but at the autopsy no signs of syphilitic aortitis, etc., were found.

Another case of ours, illustrating the difficulty in the diagnosis, may be quoted here. The patient was a girl, aged 14 years. On examination Hutchinson's teeth, syphilitic ulcers on the left leg and abdomen, ascites, enlarged liver and aortic regurgitation were found. The Wassermann reaction was repeatedly positive. The urine contained albumin, hyaline and granular casts. There was a history of chorea some years ago. Clinically, on account of the presence of syphilitic ulcers, and especially of Hutchinson's teeth, hereditary syphilitic disease of the heart and of the aortic valves could not be excluded. It might be also a case of mixed infection—(1) syphilitic, and (2) endocarditis after chorea. But the autopsy, made by Dr. E. Fraenkel, showed that macroscopically there were no signs of

syphilitic disease of the circulatory system or of hereditary syphilis of the viscera. It was a case of sero-fibrinous pericarditis and verrucose endocarditis of the aortic and mitral valves (in all probability after chorea). It may be mentioned here that the Hutchinson's teeth have been found not only in hereditary syphilis, but also in rickets, and especially in infants infected with syphilis in the first months of life by wet-nurses, relatives, etc. (Campbell, Heubner, Hochsinger, Welander and others). In one of my cases at Moscow of syphilis in a suckling with chancre on the lip, the baby was infected by an officer, who had kissed him; afterwards the mother was infected (chancre on the nipple).

As regards the positive Wassermann reaction in cases of aortic regurgitation, or those with a suspicion of aortitis or with myocarditis, etc., it does not prove that the disease of the aorta, heart, etc., is of syphilitic origin. Besides, in our cases of syphilitic aortitis in which a post-mortem examination was made by Dr. E. Fraenkel, some of the patients had suffered previously with syphilis and articular rheumatism, and the autopsy showed either (1) syphilitic aortitis alone or with subsequent aortic regurgitation, (2) lesions typical only of endocarditis following acute infectious diseases, or (3) lesions typical of both of these two groups. The following case of ours should illustrate the last group, as well as how necessary it is to be cautious with the diagnosis in cases of syphilitic aortitis and aortic regurgitation. The patient was a man, aged 41 years. His mother was probably infected with syphilis, as she had eleven children, of whom seven were stillborn or died soon after birth. The patient himself gave a history of syphilitic infection at the age of about twenty-one years, and of articular rheumatism at the age of twenty-eight years. After rheumatic fever he began to suffer from palpitation. In the last two and a-half months of life he developed symptoms of failure of compensation, aortitis and aortic regurgitation, nephritis, asthmatic attacks and incipient tabes. The autopsy, made by Dr. E. Fraenkel, showed syphilitic aortitis with subsequent aortic regurgitation, verrucose endocarditis of the mitral valve with subsequent stenosis, obliteration of the pericardium, etc.

Thus in this case the wall of the aorta and the aortic valves showed typical syphilitic lesions, whilst the mitral valve was involved by another infection (rheumatic fever).

This patient had a history of syphilitic infection, otherwise, following the example of some authors who describe cases of hereditary syphilitic aortitis in adolescents and adults (*vide infra*), we could regard it as a case of hereditary syphilitic aortitis.

I will briefly mention here the cases of aortitis on record which have been described as of hereditary syphilitic origin.

Wilson and Marcy reported a case of ruptured aneurysm of the ascending and transverse arch of the aorta with stenosis of the aortic valve in a child aged 4 years. The aorta outside the valve showed extensive layers and patches of atheroma, and the aortic wall was very thick. The authors thought that the aneurysm was due to latent hereditary syphilis, but the parents denied syphilitic infection. No cicatricial inflammatory process typical of syphilitic aortitis or other specific signs were found, and all the signs described were inconclusive.

In the case of Landois in a girl, aged 6 years, syphilitic endocarditis was found at the autopsy. But it might have developed after birth, the more so as at the post-mortem of the girl's mother and her brother no signs of syphilitic infection were noticed. The aorta showed nothing abnormal.

Hochsinger states that he observed aortitis in two congenital syphilitic children, aged 8 and 12 years respectively, but does not give any details of his cases.

I was unable to find the original paper (in Danish) of Lauritz-Melchior, who described three cases of syphilitic aortitis.

Nixon described a case of aneurysm of the abdominal aorta in a girl, aged 20 years, whose mother died from pulmonary tuberculosis. At the autopsy a rupture of the abdominal aorta, syphilitic aortitis, etc., were found. The only proof in this case that there was hereditary syphilis with hereditary syphilitic aortitis were the so-called Hutchinson's teeth. But, as was mentioned above, they may also occur in rickets as well as in syphilis acquired in infancy. Thus this is not a proved case of abdominal aneurysm caused by congenital syphilis as the author thinks.

Marchand demonstrated a specimen of syphilitic aortitis in a woman, aged 28 years, whose father had died from general paralysis. The patient herself denied syphilitic infection. There is no proof at all that it was a case of hereditary syphilis as the author supposed. Syphilitic parents may give birth to healthy children who afterwards can be infected with syphilis.

In nearly all the other cases described under the name of hereditary syphilitic aortitis no autopsy was made (Buchta, Stadler, Lippmann and others).

Specially doubtful are the cases of hereditary syphilitic aortitis described by A. Fournier, Chiray and Seguard, Biermann, Neugebauer and others.

Thus Fournier reported a case of aortic regurgitation due to hereditary syphilis in a man, aged 40 years. There was a history that his mother had had twelve children of whom eight died. At the age of six years the patient had had some ulcers on the legs. At the age of twenty-eight no signs of heart disease were found. Anti-syphilitic treatment was followed by improvement. No other proofs were given that it was a case of aortic regurgitation due to syphilitic aortitis, *i. e.* of arterial and not of endocardial origin after an infectious disease. There was no autopsy.

In the case of Chiray and Ségard's case of aortic aneurysm due to hereditary syphilis, the patient, aged 50 years, denied syphilitic infection. There was also no autopsy, and the diagnosis was based chiefly on the history. But if we maintain that in adults who deny syphilitic infection visceral syphilis is of hereditary origin, then we shall be obliged to attribute nearly 50 per cent. of cases with visceral syphilis to hereditary infection. So far the majority of the patients have denied or really could not remember anything about their previous symptoms. This was observed also in our cases. Out of 36 female and 96 male patients, in whom syphilitic aortitis was found at the post-mortem made by Dr. E. Fraenkel, only one female patient gave a history of syphilitic infection by her husband four years previously. Out of the 96 male patients less than a half gave a history of syphilitic infection or treatment with mercury.

Conclusion.

So far I have not been able to find in the literature a single case of proved hereditary syphilitic aortitis in older children, and especially in adolescents and adults, though such cases may exist. Thus further researches about hereditary syphilitic aortitis are needed.

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SUPRARENAL SARCOMA OF THE ROBERT HUTCHISON TYPE.*

By F. Parkes Weber, M.A., M.D., F.R.C.P.Lond.

The patient, D. L. S—, aged 5 years, a cachectic and emaciated English girl, was admitted to hospital on March the 4th, 1920. The liver was enormously enlarged and the eyelids of both eyes were symmetrically swollen and ecchymotic, of a blackish blue or purple colour (see Fig. 1). The liver, of firm consistence, could be felt occupying most of the front of the abdomen; the right lobe extended down to the pelvis, and the left lobe nearly so; the surface of the organ was smooth and even; the gall-bladder could not be distinguished by palpation. The spleen was likewise not made out. There was slight ascites, enough to give a fluctuation-thrill. There was no enlargement of any superficial lymphatic glands. By Röntgen-ray examination of the thorax (Dr. James Metcalfe) some hilus lymph-glands were seen. By ophthalmoscopic examination (Dr. C. Markus) the optic discs were found to be pale and to have blurred edges, indicating a condition of post-neuritic atrophy of the optic nerves; there were no retinal hæmorrhages. The child was nearly blind with both eyes. The superficial veins over the front of the abdomen were much distended and the veins on the forehead were also abnormally noticeable. The whole face had a swollen, "puffy" appearance. There was moderate œdema of the lower part of the trunk and the lower extremities. There was no fever; the pulse was 104 to 140 per minute; respirations 28 to 36. Brachial systolic blood-pressure, 108 mm. Hg. The urine was of specific gravity 1027, acid, loaded with urates, free from sugar, and showing only a slight trace of albumin.

The *history* obtained was that the child had "influenza" in April, 1919, but that the present illness commenced at the beginning of November, 1919, with various pains. The belly had been enlarged for the last month, and the child had been nearly blind for the last five days. The ecchymotic swollen condition of the eyelids had been present during the last fortnight, but had for a time been previously observed, namely, for six weeks or so about the end of 1919. During the last week there had been occasional vomiting.

The father, aged 28 years, and the mother, aged 29 years, were

* A paper read at the Royal Society of Medicine, Section for the Study of Disease in Children, on April the 23rd, 1920.

both of them healthy-looking and intelligent, and in both of them the Wassermann reaction (March the 8th, 1920) was completely negative. The patient was their second child. The mother had had two other children (both living) ; no miscarriages.

By the advice of a doctor the patient had been given a teaspoonful of brandy four times daily, and this was continued from

Fig. 1.—From a photograph (for which I am indebted to Dr. Fankhauser) taken on March the 14th, 1920, not long before the patient's death, showing the remarkable ecchymotic swelling of the eyelids.

the beginning of November till the beginning of December, 1919. Since that time a teaspoonful of brandy had been administered occasionally (not often). This history made one at first think of the possibility of the child having alcoholic "hypertrophic" cirrhosis of the liver. If the brandy was of a bad quality, adulterated with methyl-alcohol, the optic nerve disease might also be accounted for. But it was ascertained that one of the finest obtainable

qualities of cognac had been used. The whole illness could, therefore, scarcely be attributed to the brandy.

Chloroma or any form of leukæmia was negatived by examination of the patient's blood, which showed anæmia, but no great excess of white cells; nor was the differential count of white cells in favour of leukæmia. On March the 5th the red cells were counted as 1,700,000 and the white cells as 13,000 to the cubic millimetre of blood. On March the 12th the red cells numbered 1,130,000 and the white cells 14,600 per cubic millimetre of blood. The differential count of white cells (March the 7th), according to Mr. H. McLean, gave the following figures: Small lymphocytes, 24 per cent.; large lymphocytes, 4 per cent.; polymorphonuclear leucocytes, 72 per cent.; no eosinophils and no mast-cells were observed during the count of 300 white cells. The red cells varied in size and there was a little poikilocytosis and polychromasia, but nothing else abnormal was found by microscopical examination.

The existence of some kind of tumour at the back of the eyes seemed probable, to account for the blindness (post-neuritic optic nerve atrophy) and the ecchymotic swelling of the eyelids. The remarkable ecchymotic discoloration and swelling gradually increased in the hospital, and involved not only the eyelids but also some of the forehead and cheeks. The œdema of the lower extremities and trunk became more marked, and the hands likewise became œdematous before the child's death on March the 15th, 1920.

Necropsy and Microscopical Examination.

In the abdomen a tumour, as large as a big orange, but of irregular shape, was found attached to the upper pole of the right kidney, which appeared very anæmic, but otherwise normal. The tumour was curiously lobulated, and in parts was very sanguineous. It showed actively growing nodules, excessively hæmorrhagic portions, and likewise necrotic areas, which last were brownish or nearly white. Microscopically the tumour had the appearance of a round-celled sarcoma. It doubtless originated in the medullary portion of the right suprarenal gland, and remains of suprarenal cortical tissue could be made out by microscopical examination in the layer of compressed capsule-like tissue enclosing the neoplasm.

The left suprarenal gland seemed normal. The left kidney was pale (like the right one), but otherwise normal (confirmed by microscopical examination).

The liver was very greatly and almost symmetrically enlarged, weighing 91 oz. It was of light brown colour on the surface. By cutting into it and by microscopical examination it was found to be infiltrated with pale, not sanguineous, new-growth; in some parts there was relatively less new-growth than in others. The tumour-cells resembled those of the right suprarenal tumour. They are shown in the accompanying figure (Fig. 2), separating the columns of liver-cells and apparently situated in the blood-capillaries. Mingled with them are lymphocytes.

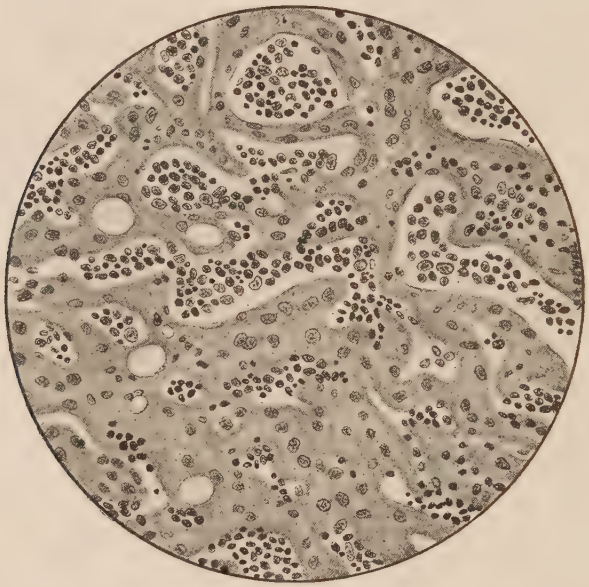

Fig. 2.—Microscopic drawing (magnification 320) from a section of the liver to show the diffuse sarcomatous infiltration of the liver. The tumour-cells distend the blood-capillaries between the columns of hepatic glandular cells, and mingled with them are lymphocytes.

The spleen (weight, $2\frac{1}{2}$ oz.), pancreas, heart and right lung showed nothing special, but old pleuritic adhesion was observed about the left lung. There was no fluid effusion in any of the serous cavities at the post-mortem examination. The ovaries (of the size of olives) were both enlarged with very sanguineous new-growth, similar to the right suprarenal tumour (confirmed by microscopical examination of one ovary).

There were abdominal lymphatic glands similarly infiltrated with new-growth, but some caseous lymphatic glands at the roots of the

lungs and in the mediastinum (one of them was examined microscopically) were doubtless tuberculous.

The orbits and skull were more or less symmetrically involved by metastatic, very sanguineous areas of new-growth, the cells of which resembled those of the suprarenal tumour. In the cranial cavity the growths were flat and diffuse and were situated between the dura mater and the inner table of the skull. Osteophytic spicules projected from the inner table into these metastatic deposits. The brain itself seemed normal. The ecchymotic swelling of the eyelids, which constituted such a notable clinical feature of the case, was doubtless due to blood-extravasation connected with the diffuse tumour-infiltration of the periosteum of the orbits, etc. The optic neuritis and blindness may have been partly due to actual compression of the optic nerves at their passage through the optic foramina. The structure of the tumour in the right suprarenal mass, the abdominal lymphatic glands, the ovaries, the dura mater and cranial bones was obviously all of the same kind. The diffuse growth in the liver, as I have already stated, differed somewhat from the growths elsewhere, but only inasmuch as it contained relatively little blood.

I have to thank Prof. S. G. Shattock for his kind help in the examination of the pathological specimens from the case, and for superintending the drawing from a microscopical section of the liver (Fig. 2).

Remarks.

The case is evidently one of primary malignant disease of the medullary portion of the suprarenal gland in a child, with secondary, multiple, diffuse, more or less symmetrical metastases in the cranium —of the type of which Robert Hutchison, in 1907, collected ten examples, six of which were as yet at that time unpublished. In 1908 W. Tileston and S. B. Wolbach reported a fresh example of adrenal sarcoma in a child of the Robert Hutchison type. For certain reasons (though, I think, wrongly) they rejected one of Hutchison's ten cases (that of Ogden and Mathews in 1906), but they added four further cases which they had discovered in their search through the literature. Thus they brought the total number of known cases up to fourteen, including the one described by themselves. They said that the tumour-cells resembled the undifferentiated cells of the bone-marrow, the so-called pre-myelocytes or myeloblasts.

I see no reason for refusing to call the tumours in these cases sarcomata, though apparently R. S. Frew (1911) would call them

carcinomata. Bulloch and Sequeira (1905) concluded that cases of primary "blastomata" of the suprarenal glands not associated with precocity in sexual development were usually lympho-sarcomata. That is perhaps practically equivalent to saying that the tumour-cells resembled the undifferentiated cells of the bone-marrow. But I do not think it advisable to call the growths lympho-sarcomata.

Clinically, owing to the involvement of the orbital region of the skull and the presence in some cases of decided exophthalmos, the children may at first sight be regarded as suffering from chloroma or some form of acute or subacute leukæmia, but this error could be avoided in the majority of cases, as it was in the present case, by a careful examination of the blood. Nevertheless, even at the post-mortem examination in the present case, the spicules of bone projecting from the inner table of the cranium into the deposits of new growth on the dura mater somewhat resembled a condition met with in chloroma—a condition which constituted a striking feature of Firth and Ledingham's case of "atypical chloroma," described about ten years ago. Moreover, microscopic examination of some portions of the liver in the present case might at first sight be supposed to show diffuse leukæmic infiltration of the organ.

Scurvy, with hæmorrhage in the orbits or eyelids, could not even be suggested as a possible explanation of the clinical manifestations in the child under consideration, though in some cases of infantile scurvy proptosis (especially of the left eye), due to orbital hæmorrhage, has been observed.

A remarkable feature of the present case was the enormous nearly uniform enlargement of the whole liver, which during life not only completely masked and concealed the presence of the suprarenal tumour, but also, when considered in association with the history of the medicinal use of brandy, gave rise at one time to the suspicion of alcoholic hypertrophic hepatic cirrhosis. It was suggested that the child's blindness might be due to the brandy having been adulterated with methyl-alcohol. But this suggestion, as I have already stated, was found to be wrong, when the remainder of the brandy which had been used was produced by the parents.

The excessive involvement of the liver in the present instance makes one think also of the cases, recorded by W. Pepper (1901), of sarcoma involving the liver and suprarenal gland in newborn children, but his cases were congenital and come under a separate category.

Perhaps the two most valuable diagnostic signs during life in the Hutchison group of cases are (when present), first, the dark ecchymotic swelling of the eyelids on one or (more usually) both

sides, with or without actual exophthalmos, and, secondly, the optic neuritis or post-neuritic atrophy. In the absence of both these clinical signs one ought to hesitate in regard to the diagnosis. These signs were both absent in the boy, aged 2½ years, shown by E. Cautley on June the 20th, 1919, and the case turned out to be one of sarcoma not involving either of the suprarenal glands.

Addendum.

After reading a paper by Douglas Symmers ("Recurrent Neuroblastoma," 'Journ. Amer. Med. Assoc.,' 1913, lx, pp. 337–340), kindly sent me by Sir H. D. Rolleston, I have come to the conclusion that my case, like other cases of the Hutchison type, is really a malignant hypernephroma of the suprarenal medulla, not of sarcomatous, but of neuroblastomatous nature. The tumour-cells have very little cytoplasm, but richly chromatic (mostly rather large) nuclei. In some parts there are "tangled masses of fibrils," with a suggestion of "rosette-formation" of the cells. In my case the Hutchison distribution of metastases (in the cranium) was combined with excessive diffuse infiltration of the liver (as in the Pepper cases). Prof. Shattock had also drawn my attention to the "neuro-cytoma-like" appearance of the tumour-cells, but by a mistake I had not seen his note. F. P. W.

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STIGMATA OF PREDISPOSITION TO BONE AND JOINT TUBERCLE.

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(*Continued from p.* 70.)

II.—COMPARISON OF SUBJECTS OF BONE AND JOINT TUBERCLE WITH NORMALS.

In the last number endeavour was made to pick out from the literature definite tangible personal stigmata which it was possible to regard as predispositional; and of those obtained, perhaps the most definite again are three in number, to wit red hair, ichthyosis and nasal abnormality. Mainly these three will be dealt with now. And first a word or two as to the

Clinical Material.

The study material comes from more than one source, as is advisable in order to get as fair a sample as possible of the disease under notice. First there are children—mainly, but not solely, under twelve years old—examined during a stay at the Treloar Hospital at Alton, Hants, and on several visits to the King Edward VII Hospital for surgical tuberculosis near Sheffield. I have to express cordial thanks to Sir Henry Gauvain, M.D., and to Dr. Lee Pattisson, of these institutions, for facilities extended to me. Then there are 73 patients of all ages, being those notified during the last six years in the district round Barnsley. Since in the great majority of instances tuberculosis attacks osseous and articular structures in childhood, the above constitutes a representative study material of this form of the disease. Not every patient has been examined for all three stigmata —occasionally a child would be too restive for nasal examination, and so on—but still an adequate number in respect of each particular. The control of normals has been got from school-children in South Yorkshire districts, relatives of the patients being of course excluded.

In the case of the first point of inquiry, that of the comparative incidence of

Red Hair,

the gross result comes out as follows:

Patients with tuberculous bone or joint—25 with red or reddish hair out of a total of 353 examined (7 per cent.).

Normal controls—21 with red or reddish hair out of a total of 610 examined (3·4 per cent.).

Thus in bone and joint tubercle red hair would seem to be a trifle more than twice as frequently met with as in the non-tuberculous. However, this gross result may overstate the truth a little. There is the possibly disturbing influence of minor ethnological differences to be considered. The Alton cases included some from Wales, a country whose inhabitants, according to Beddoe(1), the home anthropological authority who has especially worked at pigmentation, have red hair more commonly than usual. At Alton there were 23 Welsh patients, of whom 2 were red-haired—a percentage of 8·6, the percentage in the whole hospital being 7·3. Still, if we leave these 23 cases out of count, obviously the percentage found in the whole material is lowered only to 6·9. Minor ethnological differences might be expected, indeed, to be outweighed by pathological ones. An exact comparison in the ethnological regard is furnished by the cases from Yorkshire, since all of them, tuberculous and healthy alike, lived in the southern part of one division of this county.

In 95 with bone or joint tubercle there were 6 with red hair (6·3 per cent.).

In 610 normals there were 21 with red hair (3·4 per cent.).

The numbers of the tuberculous are small here, however, so that we shall probably be within the truth if we conclude that *in bone and joint tubercle red and reddish hair is nearly twice as frequent as in the ordinary population.*

Respecting sex-incidence there is nothing to note; red hair affected the sexes exactly equally in the normals, almost so in the tuberculous.

As to the situation of the tuberculous lesion, perhaps in the red-haired the spine was rarely attacked. Hardly more of them than of the others had multiple lesions of tubercle.

Regarding *freckling,* which was present in every case of red hair save one, usually with marked intensity, two comparisons were made. The first took place in the beginning of September, when the normal school-children had just come back from a month's holiday at the hottest time of the year, and therefore could be compared with the tuberculous children, so many of whom had undergone heliotherapy. No significant difference between the two classes was found. The second trial was made at the beginning of February, when summer freckling had had time to fade and when no sunlight of any strength occurred (the tuberculous patients examined had undergone no artificial heliotherapy either). It resulted as follows :

Freckling.

	Ordinary.	Heavy.
Tuberculous . .	65 per cent. .	5 per cent.
Control . . .	57 „ . .	3 „

Probably then a tendency to permanent freckling is a little commoner in bone and joint tubercle than is normal.

In pathological respects skin, hair and teeth are often connected. Cornet quotes figures showing that women suffer from dental caries more than men do, and supposes some relation with women's thinner skin, which he makes a factor in their greater liability to surgical tubercle. Accordingly it seemed of interest to inquire as to the teeth of red-haired children as compared with others. Mr. Bowler, L.D.S., dental surgeon to the West Riding Education Committee, and Nurse Sievwright have kindly furnished me with particulars concerning 371 red-haired children and 297 others drawn from the same schools. The percentages come out as follows, those referring to the red-haired children being in heavy type:

	Boys.		Girls.	
Sound teeth	**15**	15 .	**16**	19
Decayed temporary teeth .	**57**	58 .	**60**	50
Decayed permanent teeth .	**26**	25 .	**23**	29

As regards dental caries, then, there is no significant difference between the red-haired children and the others.

Lastly, it is well worth noting that red pigmentation is a primitive trait. In primeval man "the hair is long and straight, the colour probably bright chestnut red and the skin copper colour . . . the foreheads recede, the large bushy red eyebrows meet over the nose" (Worthington Smith in 'Man the Primeval Savage,' cited by Hutchinson, 'Prehistoric Man and Beast,' London, 1896, pp. 35, 36). The red hair of the Welsh aforementioned may be an instance in point, they being more of an ancient, unmixed stock than the English. As for lower animals, Lubbock ('Origin of Civilisation,' 4th ed., London, 1882, p. 515) says the original of the domestic fowl was of a reddish colour, and quotes Darwin's finding atavism in crossing a white and a black breed, when red feathers appeared in the offspring. One recalls, too, that the most primitive breed of English pig, the Tamworth, which shows "unimproved" characters, long legs and snout, prolificacy, large consumption of food and poor fattening capacity, is also of red colour.

Ichthyosis.

Ichthyosis occurred in our material thus:

In 71 Barnsley cases (40 male, 31 female), 1 ichthyotic (female).

In 258 Alton cases (144 male, 114 female), 3 ichthyotic (2 male, 1 female).

In 92 Sheffield cases (60 male, 32 female), 3 ichthyotic (2 male, 1 female).

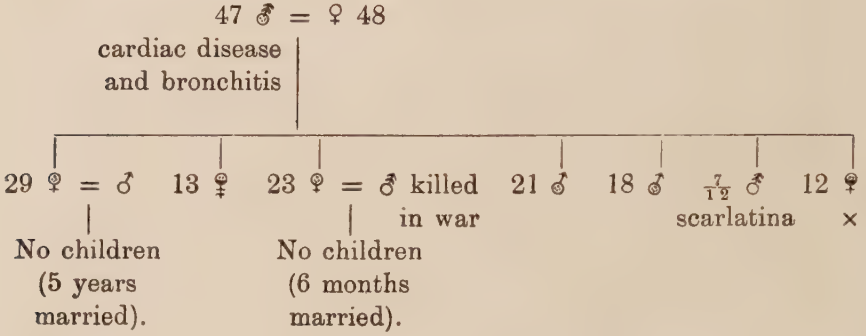
In 421 total cases (244 male, 177 female), 7 ichthyotic (4 male, 3 female).

On the total, then (and in both males and females), the percentage of ichthyosis was 1·6. This compares very closely with the 1·4 per cent. found by Rivers (*loc. cit.*) in consumptives. The difference, if any, might be expected to be in favour of surgical tuberculosis, because in this form the age of attack is lower, and ichthyosis tends to ameliorate with time, so that a slight childish xerodermia might be no longer apparent in a consumptive, say, of thirty years old. The even sex-incidence is known to occur in ichthyosis. However, there are two diagnostic fallacies to be borne in mind in connection with its occurrence in bone and joint tubercle. The first is the desquamation which often follows heliotherapy; the second the general dryness of integuments seen in children not in good health. But skin roughness arising in either of these ways shows little of that predilection for extensor surfaces which is so elementary a characteristic of ichthyosis and xerodermia, while the presence of other well-known features of this affection is shown in the seven appended case-histories.

Barnsley case.—A. B—, school-girl, aged 12 years. Tuberculous periostitis of tibia and dactylitis of left hand for eleven weeks past; later pyogenic scrofulosis developed. She had ichthyosis of the knees, shins and upper arms, which, according to her mother, had existed from early childhood. All her brothers and sisters (ichthyosis is known as the most hereditary of skin diseases) had rough skin too, except an infant which died at seven months old of scarlatina. The mother reported that as young infants none of them showed rough skin (of course a familiar history in ichthyosis). Besides this child, the mother was the only one in the family with normal skin, for the father, who died at forty-seven of cardiac disease and chronic bronchitis (ichthyotics are known to be liable to cardiac affection), had ichthyosis so severely that his bed, and sometimes the bedroom floor, would be white with desquamated skin-flakes. Obviously this family history can be conveyed more briefly in pedigree form,

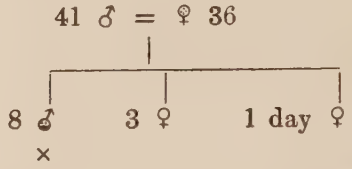
employing the usual symbols (♂, ♀) for male and female respectively, leaving the circle clear for normals, filling it in for tubercle (♂, ♀), filling it with dots for ichthyotics (♂, ♀), and half-and-half (♂, ♀), for tuberculous ichthyotics. Dead subjects are shown thus (♂, ♀).

In this notation the above girl's family is thus recorded :



The cross below a subject denotes the patient.

Alton cases.—S. K—, London school-boy, aged 8 years. Lumbo-sacral caries of some duration, phthisis, lardaceous disease. Ichthyosis affecting most of trunk and limbs, and dating from an early age.



The mother's condition was peculiar : the face alone was rough and she had no eyelashes. She stated that these had never grown, and that a sister of hers (married, with three normal children) had just the same facial peculiarity.

V. J—, school-boy, aged 5 years. Tubercle of left hip. A dark, pretty, curly-haired child with skin rough all over body, limbs and face. The parents lived a great way off, and were not seen. It was stated, however, that the father had rough skin.

M. S—, London school-girl, aged 12 years. Tubercle of right hip. Ichthyosis mainly of limbs (see photograph) dating from an early age.

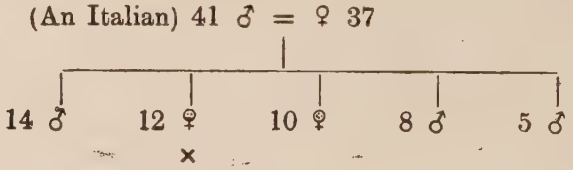


FIG. 1.

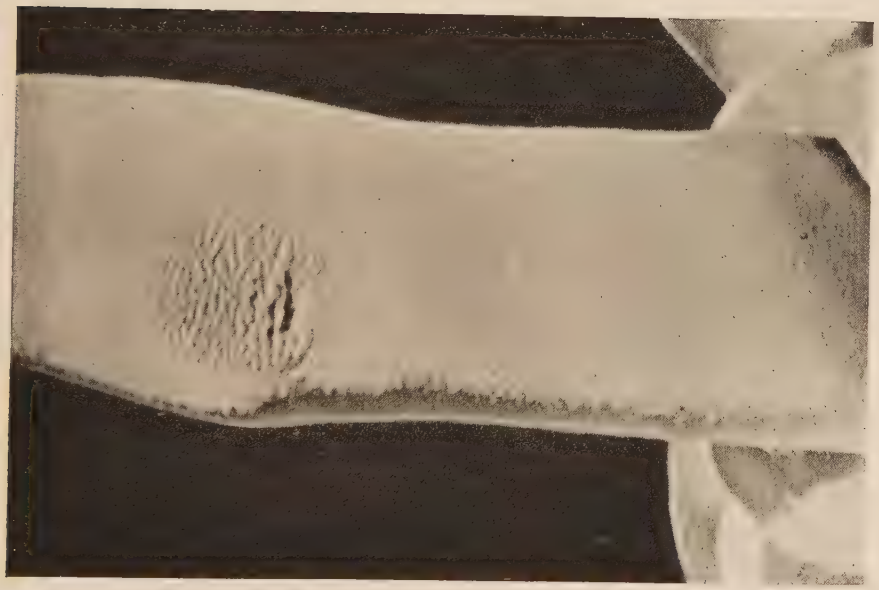
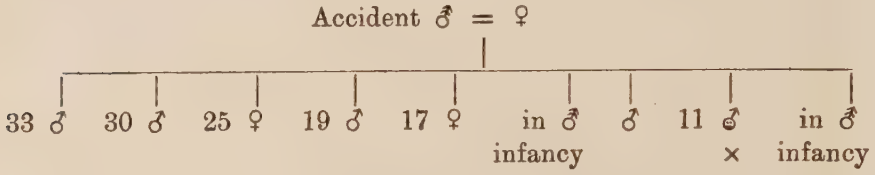


FIG. 2.

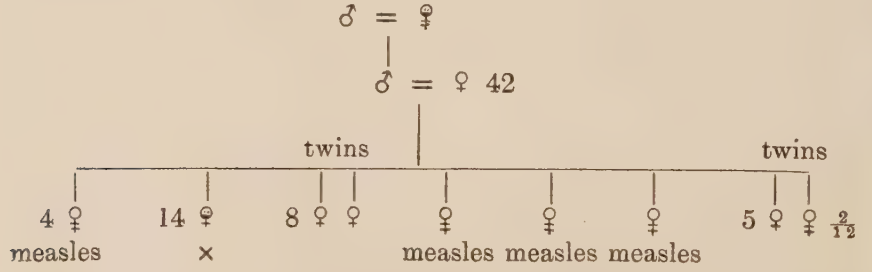
Ichthyosis of arms in a girl, aged 12 years, with hip disease. (Note fine roughness on upper arm and forearm, with exaggerated cornification of skin over point of elbow.)

The mother volunteered that she had a sister who has a child, an apparently healthy girl, aged 6 years, with "fish-scale skin," the only other offspring being a baby which died three hours after birth. This pedigree of M. S— shows sex-limitation of the ichthyosis in the family—a phenomenon known to occur in a certain proportion of ichthyotic families.*

Sheffield cases.—T. B—, Sheffield school-boy, aged 11 years. Tubercle of left hip. Slight ichthyosis, mainly on limbs.



A. N—, Sheffield school-girl, aged 14 years. Tubercle of left hip and left knee. Ichthyosis on face and shins. The mother thought the child had the skin rough only since her leg got bad. However, the history of rough skin in a grandparent is significant, as also probably the double twinning in this family with the (rather often associated) excess of female births: in families where twinning is frequent (says A. Mitchell in 'Medical Times and Gazette,' 1862, ii, p. 512) bodily deformities likewise occur with frequency. Simpson ('Obstetric Works,' vol. ii, p. 349) also maintains the relation of malformation to twinning. Many cases of malformations in twins are cited by Féré ('Famille névropathique,' 2nd ed., Paris, 1898, p. 175).



W. F—, Sheffield school-boy, aged 6 years. Caries of upper dorsal spine. Ichthyosis of face and legs. The teachers reported of this boy that he was very forward at his lessons, being able to do sums that most children of his age could not. The mother was free from

* As in eight out of forty-five ichthyotic pedigrees collected by Stainer ('Oxford Dissertation,' H. Frowde, 1910), and now quoted in text-books.

ichthyosis, and said there was no rough skin or tuberculosis in the family (he was an only child).

Amongst these seven ichthyotics, the proportion of multiple lesions —four, or more than half—is certainly rather high; however, the numbers are too small to afford a reliable indication.

We have said, in connection with red hair, that this stigma cannot possibly be tuberculo-toxic in origin. It might conceivably be urged that in the ichthyotic cases, although mostly there was a clear history of the skin affection preceding the visceral one, yet all the same the ichthyosis was an expression of latent tuberculosis; Tommassolli (*loc. cit.*) thought ichthyosis might be the sign of some undefined chronic auto-intoxication. This could be urged, but evidence in support of the hypothesis does not seem to exist. Although several skin diseases have been rightly re-classed with the tuberculides, no one has ever advanced any claims of ichthyosis to rank among their number; and its histo-pathology has been very thoroughly studied too. But there is much evidence against such a view, partly noticed in Chapter I. In a Barnsley ichthyotic patient with surgical tubercle, not included in the above series because met with before systematic recording of bone and joint cases had been begun, the question as to diagnosis of the joint affection was raised by a surgeon. Accordingly a test injection of tuberculin was given, and fortunately there resulted a focal reaction. The joint became red, painful and swollen, showing that the enlarged knee was tuberculous. But no sign of reaction occurred at any place on the patient's ichthyotic skin. Rivers (*loc. cit.*) had similar experience with ichthyotic consumptives and concluded that the tuberculosis was no cause of the ichthyosis. The *à priori* case, as put in the last chapter and in the present one, is rather strong for the likelihood of the skin affection predisposing to the visceral one. It is just this *à priori* case, arising partly from the peculiar morbid associations, and degenerative, atavistic* character of ichthyosis, that the practising specialist clinician is apt to miss sight of. Lastly, to make ichthyosis into a tuberculide involves regarding all ichthyotics as tuberculous subjects, which is rather absurd. Ichthyosis first appears, as is well known, at a time of life comparatively free from latent tubercle.

The control of normals consisted as before of South Yorkshire school-children from whom relatives of the patients had been

* See, for instance, the atavistic theories of origin of ichthyosis due chiefly to Bowen, 'Journal of Cutaneous and Genito-urinary Diseases,' New York, 1895, xiii, p. 485. Also to Renshaw, 'A New Theory of Ichthyosis,' Manchester, 1914.

excluded. This point would be important to anyone who, not knowing the tuberculous population of a neighbourhood, desired to repeat there this particular inspection of school-children. For it would probably be found that the ichthyotics who are discovered have consumptive or surgically tuberculous relatives (and also relatives with cardiac disease) noticeably frequently. Tuberculous patients who, being treated at home by their family doctor, had not got on to the tuberculosis dispensary books, have been discovered in this way.

In 324 subjects (123 boys, 201 girls) ichthyosis was seen twice, both times in the latter sex; the percentage was thus 0·6, which contrasts with the 1·6 per cent. found in the tuberculous: 1·6, by the way, is exactly the percentage also of all forms of non-infectious skin disease amongst school-children of the West Riding of Yorkshire*; ichthyosis alone must therefore be greatly less common. We may safely conclude that *it is at least twice as frequent in bone and joint tubercle as in non-tuberculous children.*

(To be continued.)

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, April the 23rd, 1920.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Three Cases of Renal Dwarfism Associated with Curious Bony Changes.—Dr. D. H. Paterson.—Case 1 was that of a boy, aged 11 years, who was admitted to hospital in January, 1917, for deformity of the legs and arms and inability to walk because of knock-knee. The condition had been present for four years. He was healthy at birth and breast-fed for nine months, but afterwards kept on fluid food longer than usual since he disliked solids. He had always been fond of fruit, and had been a great drinker of water. The father and mother and the four other children of the family were all healthy and showed no bony deformities, nor was there any family history of kidney disease. Until the age of six he had been quite well, but then had an illness which started acutely, and was accompanied by feverishness and vomiting. After this he did not seem so well, and at the age of seven it was noticed that his legs were bent, and he became progressively more knock-kneed. He was treated for rickets by splints, but at

* 'Seventh Annual Report of School Medical Officer,' Wakefield, 1915, p. 50.

seven and a-half years old was admitted to the local hospital, where it was found that he had kidney disease. The bones of his legs were broken and reset, and from that time he had not been able to walk. When admitted to the Hospital for Sick Children, Great Ormond Street, he was found to be a very small, pale child, and very thin. The legs were markedly deformed, with bowing outward and forward of the femora and tibiæ; there was also marked muscular wasting. An operation of double osteotomy of the femora was done, and was followed by uræmia, which proved fatal. The urine, examined after operation, contained albumin and casts. X-ray examination showed bony deformities. Post mortem the kidneys were extremely small and showed some cystic and fibrotic changes. The only other organ which was found abnormal was the heart, which was dilated.

Case 2 was that of a boy, aged 1 year and 9 months, admitted to hospital in September, 1919, with deformity of the ankles and wrists, which had been present for ten months. There was no other case of deformity in the family. The boy had been breast-fed until eleven months old, and had never been able to take any solid food. When a year old he was fat and could stand, but was small. He seemed to lose power in his legs, and later it was noticed that his arms gave way also, and he had no strength in them. They afterwards became permanently flexed. After an illness in March, 1919, associated with constipation and vomiting, he steadily lost weight. When admitted he was seen to be a very much under-developed and under-nourished child, and weighed 10 lb. 8 oz. He seemed to be bright and intelligent, but did not speak. The thorax was long and narrow in shape, and there were parietal and frontal bossing and open anterior fontanelle, beaded ribs and Harrison's sulcus. The liver and spleen were both enlarged. The back was straight, but the limbs were extremely deformed; the femora were bowed and the patellæ rotated outwards; the tibiæ were very bowed, and the radii and ulnæ showed a like deformity. The hands were held in accoucheur position, but there was no suspicion of tetany. Respiratory, circulatory and nervous systems were normal. Ten days after admission the child's diet was increased to solid food, including minced meat and potato. He then developed uræmic convulsions and died. Post mortem the left kidney was found to be extremely small and appeared to be cirrhotic. The right was slightly larger, but was also abnormal, its condition suggesting old inflammation and its capsule stripping with difficulty. Both suprarenals were enlarged. The bones showed changes typical of rickets at the epiphyses. Microscopically the sections of the kidney showed a condition of fibrosis to a marked degree, the kidney substance being replaced entirely in some areas by fibrous tissue. The arteries were greatly thickened and many of the glomeruli were obliterated. In some places the tubules showed enlargement as though in an early stage of cyst-formation. The kidneys weighed about a drachm each.

Case 3 was that of a girl, aged 7½ years, admitted for the contracted legs and bent wrists which had been present since birth. There was no family history of a similar condition. She was a premature child, born at the seventh month of intra-uterine life, and had been breast-fed for six weeks, after which time she was given cow's milk and seemed to thrive quite well. She had never walked. At three years a tenotomy had been done, as her feet were drawn up. On admission she was found to be 34 in. in length. Her head was square and bossed. The shoulders were sloping and rounded, and the clavicles curved antero-posteriorly. There was possibly an old fracture of the right clavicle. Flexion, extension and abduction of the

shoulder-joint were all limited. The humeri were very thin. The radius and ulna on each side showed great enlargement and deformity at the lower ends, giving the impression of old fractures which had united in bad positions. The thorax was long and narrow and pigeon-chested, and the ribs were beaded. The liver reached to two fingers' breadths below the costal margin; the spleen was just palpable. The legs would not fully extend at the hips, and there was considerable genu valgum with rotation of the patellæ outward, the knees not being able to be fully extended. The tibiæ were small and sabre-shaped, and the lower ends of the tibiæ and fibulæ were much enlarged. Dorsiflexion of the feet beyond a right angle was impossible. The back was straight. The urine contained a trace of albumin but no casts. Mentally the child was very backward and seldom spoke. The phenol-sulphophthalein test indicated a great retardation in the secretion of the kidney. The Wassermann reaction was negative. An attempt was made to correct her bony deformities, but the left leg was refractured while being manipulated. Two days before her death she developed fine tremors of her hands, and a large amount of albumin was present in the urine. The urea was 0·3 per cent., and the nitrogen excreted as ammonia was to that excreted as urea as 1 to 10. Creatinin equalled 8 mgrm. in 10 c.c. of urine. The child became comatose and died, passing no urine during the last twelve hours of her life. The cerebro-spinal fluid was normal but for a greatly increased amount of urea. The kidneys, post mortem, weighed 12 drm. each and the suprarenals 2 drm. each. The kidneys were cirrhotic, their capsules stripping with great difficulty, and on section several small cystic spaces could be seen. Microscopically there was marked increase of fibrous tissue throughout the kidneys and a tendency to cyst-formation, the tubules being greatly enlarged and filled with colloidal material. The glomeruli were fibrosed in places. Attention was particularly drawn to the bony deformities. These, he considered, were quite unlike those of rickets; the epiphysial lines were straight and the radiographs distinct from those of rickets. Below the epiphysial lines there was a stippled appearance, which the microscope showed to be due to cartilaginous callus with partly formed bone present in the islets. The same appearance might be seen in rabbits at the site of a fracture. One explanation of the picture might be that it indicated the repair of multiple fractures by the bone throwing out cartilaginous callus at their sites. Certainly the radiograms seemed to show that there had been multiple fractures on the diaphysial side of the epiphysial line.

Case of Renal Infantilism.—Dr. H. Morley Fletcher showed a girl, aged 14 years, who had been backward in physical development since infancy and had suffered from polyuria. She was small, weighing only 35½ lb., with a pallid face and poor nutrition. Her intelligence was good. There were no signs of puberty, and her appearance was that of a girl aged five or six. The systolic blood-pressure equalled 240 mm. Hg. The left ventricle was hypertrophied, and the aortic sound (second) accentuated. The radial pulse was thin and wiry. The only bony deformity was a slight genu valgum. The urine was acid, its specific gravity 1010, and it contained 0·3 per cent. of albumin and a few granular casts. The *Streptococcus fæcalis* had been grown from it. Albuminuric changes were present in the optic disc and were of some standing. Speaking of these cases generally, he said that the degree of infantilism was perhaps more marked than in any other form of that condition, but the order of intelligence was rather high. A question

of interest was the significance of globulin in the urine. It had been noted in two cases. The relationship between the renal infantilism and the bony deformity was obscure. It was clear that the renal changes began either in intra-uterine life or in early infancy. Syphilis could be excluded as the cause. A possible explanation might be infection of the urinary tract.

In the subsequent discussion Dr. H. C. Cameron referred to a very early case, described by Davies Colley in about 1880, under the title, "Dwarfism and Extreme Deformity." He had himself shown a case where the fibrosis was combined with a horse-shoe kidney, and suggested that the two might be ætiologically associated. He had under his care at present a case which was very characteristic in appearance and with similar bony changes, but without albuminuria. A practical point had been emphasised by Barber, namely, the danger of operative interference, for uræmia was likely to follow.

Dr. F. Parkes Weber drew attention to a group of cases included under the term "diabetes insipidus" in which some infantilism is present (*vide* The British Journal of Children's Diseases, 1912, ix, p. 211). The differences were that in this group the degree of infantilism was not very great, there was an absence of organic disease of the kidneys, the faulty organ was probably the posterior lobe of the pituitary gland, and the Wassermann reaction was often positive, congenital syphilis probably playing a part.

Suprarenal Sarcoma of the Robert Hutchison Type.—Dr. F. Parkes Weber (*vide* p. 133).

Friday, May the 28th, 1920.

The President, Mr. J. P. Lockhart-Mummery, *in the Chair.*

Dislocation of the Thumb.—Mr. B. Whitchurch Howell showed a case of this condition in an infant. The acute flexion of the terminal phalanx caused it to resemble congenital contraction—a condition with which it might easily have been confused had no history of the accident been available.

Case of Oxycephaly.—Dr. Theodore Thompson showed a case in a child, aged 1 year. The child showed an extreme degree of this deformity, the eyes being very protuberant and the vertex of the skull very high. The occiput was but little developed. An especially interesting feature was that the early age of the infant permitted an increased intracranial pressure to be recognised readily. The anterior fontanelle was widely open and bulging, and the posterior fontanelle was also open. The frontal bones were separate. No other deformity was present and the intelligence was good.

Congenital Heart Disease.—Dr. D. H. Paterson showed two specimens of this condition. Case 1 was that of a male baby, aged 10 months, who had been admitted to hospital acutely ill with general pulmonary catarrh, accompanied by high remittent fever. Contrary to the rule, his dyspnœa had been less in the completely supine position than when he was propped up. The pulse was over 160 and often uncountable. There was no definite bruit. Death occurred after three days. Before admission to hospital he had been feverish for a day or two. Blueness had never been

noticed, but there had been previous attacks of breathlessness. Post mortem the lungs were congested, but there was no evidence of pneumonia. The heart weighed 2 oz. 14 drm. Immediately below the aortic cusps there was a hole in the interventricular septum. The aortic, pulmonary and mitral valves were all large, distorted and fleshy, but the endothelium was glistening and showed no evidence of inflammation—an observation which was corroborated by microscopical examination. Both the right and left ventricles were hypertrophied, the left more than the right. The ductus arteriosus was closed.

Case 2 was that of a male infant, aged 8 weeks, admitted to hospital for cough and dyspnœa of one day's duration, accompanied by moist sounds in the lungs. The dyspnœa was urgent, and it was found necessary to support the chest and let the head fall well back to enable the child to breathe. The respirations were sometimes rhythmical. The child was extremely pale. No cardiac murmur was heard. Death occurred next day. Post mortem the lungs were merely congested. The heart was transversely placed within the thorax and weighed 2 oz. 6 drm. The right auricle was distended and thin-walled, and the left auricle small and rudimentary. Communicating between the two was a patent foramen ovale admitting the tip of the little finger. In the floor of the left auricle lay a completely stenosed mitral orifice. The right auriculo-ventricular valve consisted of two cusps, and the corresponding orifice led into a large, thick-walled chamber, from which both the aorta and the pulmonary artery proceeded. The valves of these vessels were well formed. Below the origin of the pulmonary artery was a dilated space, the bulbus cordis, which, according to Prof. Keith, corresponded developmentally to the third ventricle of the fish. The ductus arteriosus was not patent.

Case for Diagnosis.—Dr. E. A. Cockayne showed a case for diagnosis, probably one of congenital syphilis. The boy, aged 9½ years, was undersized and mentally backward. His arms and legs were very long in proportion to his trunk, the distance from the symphysis pubis to the ground being only 1½ in. less than from the symphysis pubis to the vertex. The limbs were very slender and the feet and hands very narrow, but not longer than normal. Skiagrams showed marked osteitis of the whole of both femora and very slight osteitis of the tibiæ and fibulæ. Both humeri were thickened and probably the seat of osteitis. There were general muscular weakness, lordosis and flat feet. The testicles were very small. There were no other stigmata of congenital syphilis, the Wassermann reaction was negative, and the family history was good.

SECTION OF SURGERY: SUB-SECTION OF ORTHOPÆDICS.

November the 4th, 1919.

Birth Palsy in a Boy.—Mr. R. C. Elmslie showed a boy, aged 11 years, the eldest of three children. Delivery was instrumental, and three days after birth it was noticed that the arm hung at the side, and was never used. No treatment by splinting had ever been carried out, and no treatment had been given at all for several years past. At the present time all the muscles of the upper limb appeared to act except the external rotators

of the shoulder. The arm was held in a fixed position of abduction, forward flexion and internal rotation at the shoulder-joint, only a small range of movement being possible. The elbow was flexed, complete extension being impossible. There was a subluxation of the humerus backwards, so that it formed a prominence below the spine of the scapula. X rays showed that the head of the humerus was flattened and deformed. The case was of interest because of the marked forward flexion and abduction of the shoulder. The line of treatment proposed was first massage and mobilisation of the elbow-joint, with faradic treatment of all the muscles of the limb and active use of the hand, and later the performance of Fairbank's operation for dividing the anterior part of the capsule of the shoulder-joint and the tendon of the subscapularis, with after-fixation of the arm with the shoulder abducted to a right angle and fully externally rotated for a period of three months, and then active physical treatment.

Case of Os Tibiale Sesamoideum.—Mr. R. C. Elmslie.—The patient was a girl, aged 11 years, who three weeks before coming to hospital fell down some steps and doubled her left foot under her. From that time the inner side of the instep had been painful. Palpation showed that the tender spot was over the tubercle of the scaphoid. On X-ray examination separate ossification for the tubercle of the scaphoid on either side was found. On the left side the separate piece of bone appeared to be a little rough on its deep surface. The case appeared to be one of os tibiale sesamoideum, in which an injury had loosened the separate piece of bone upon the left side and rendered it temporarily painful. Mr. Elmslie proposed to fit an outside iron so as to throw the weight on to the outer side of the foot and so rest the scaphoid.

Injury to the Neck of the Femur Produced in Straightening a Flexed Hip in Infantile Paralysis.—Mr. E. Laming Evans showed skiagrams from a girl, aged 5 years, suffering from infantile paralysis of the lower limbs, in whom, while a flexed hip was being manipulated under an anæsthetic after subcutaneous division of the tensor fasciæ femoris, something seemed to give way in the joint. Only very slight force was used at the time. Skiagrams showed a fracture of the neck of the femur and separation of the epiphysis of the hip. It was possible, however, that the latter condition was apparent only, and that the real lesion was a simple fracture.

December the 2nd, 1919.

Two Cases of Multiple Congenital Deformities.—Mr. H. A. T. Fairbank.—Case 1: The boy was aged 11 years. He had bilateral talipes equinovarus and dislocation of both hip-joints. In the upper limbs there was a posterior subluxation of the left shoulder-joint, which was not reducible. The condition of this joint was very similar to that seen in the late stage of a birth palsy. The right elbow-joint had across the flexor aspect a bridge of skin stretching between the arm and forearm. Extension of this joint was limited. Both wrists were flexed and the fingers clawed, the metacarpo-phalangeal joint being extended and the interphalangeal joints flexed. Sensation was normal throughout. The limbs were very thin and the musculature feeble, but all the muscles reacted to a faradic current except the extensors of the wrist. Although the condition of the left shoulder resembled that seen in birth palsy, it must be probably regarded as

developmental because of its association with so many true congenital deformities.

Case 2: The boy was aged 4 months. In the upper limbs the extension of the left elbow was limited; the left hand was originally in the position of dorsiflexion with ulnar deviation. These deformities had been to some extent corrected by treatment with splints. The left hip was dislocated, the left knee rigid, and the patella absent. There was bilateral talipes equinovarus. The deformities of the hands and feet had yielded well to treatment.

Case of Multiple Congenital Deformities.—Mr. R. C. Elmslie.—The patient was a girl, aged 5 years. The head, neck, trunk and abdomen showed no deformity nor wasting. The upper limbs hung at the sides with elbows extended, forearms in a position of mid-pronation and wrists flexed, the whole limb being rotated in. The pectoral muscles appeared well developed, but the deltoid and posterior scapular muscles were much wasted. The muscles of the upper arm were moderately developed; those of the forearm and intrinsics of the hand were very feeble. The wrist-joints were flexed to a right angle, the fingers being held fully extended. The right and left arms were very similar in appearance and in the mobility of the joints, but the left was slightly smaller and shorter than the right. Most active movements were possible through a small range. At the shoulder-joint abduction could be carried nearly to a right angle, strength being poor. Adduction was fairly strong, being the movement most used by the child. Rotation in and out were both present, but very feeble. The action of the serratus magnus appeared to be normal. Extension of the elbow was present but weak. Flexion in the right arm could be carried out from the fully-extended position to an angle of 35°. In the left elbow the movement could only be carried to 160°. These movements through this limited range were fairly strong. Pronation of the forearm was complete; supination weak and possible only through a small range. At the wrist-joint there was a small range of weak, active extension. The flexor muscles appeared, however, to be quite strong. The movements of the fingers were very limited, but extension, flexion, abduction and adduction of all the fingers appeared to be present, being better in the right hand than in the left. The adductors of the thumbs worked quite strongly; the child was in the habit of holding things between the thumb and the palm or between the index and middle fingers. The latter fingers are concave towards each other, probably as the result of this use. In the lower limbs there was a dorsal dislocation of both hips, the knees were fully extended, and the right could not be flexed at all; the left could be flexed voluntarily through a small angle. The feet showed a talipes equinovarus partially corrected by operation. The muscles of the lower limbs were weak throughout—those on the right side being the worse. No knee-jerks could be obtained. Electrical examination was too difficult and painful to permit of completion. X rays showed a doubtful dislocation of the right shoulder and a dislocation of the head of the right radius forwards, in addition to the dislocation of the hips. The individual bones appeared to be well formed and five carpal bones were present on either side.

The condition of the upper limbs in this case was one which Mr. Elmslie had seen several times and had been in the habit of calling "seal-flapper" deformity. In the cases that he had seen the condition of the lower limbs had varied. In most there had been a congenital talipes, in some a disloca-

tion of the hips, and in some stiffness of the knees. In one case there was a spastic condition of the lower limbs. The deformities of the upper limbs formed a sufficiently definite type to deserve differentiation under a specific name, although the pathology of the condition was apparently unknown.

Case of Sterno-mastoid Tumour in a Child Born by Cæsarean Section.—Mr. H. A. T. Fairbank.—This child, aged 4 months, presented a hard fibroid mass in the lower part of the right sterno-mastoid. There was no torticollis. The mother was extremely ill, with vomiting, convulsions, albuminuria, and finally coma. Cæsarean section was performed to save her life, and in this the operation was successful. The head was tightly engaged in the pelvis, and considerable difficulty was experienced in extracting it. The injury of the sterno-mastoid muscle most likely occurred in disengaging the head from the pelvis, and not as the result of uterine contraction during the removal of the child.

Case of Arthritis of the Knee with Persistent Flexion.—Mr. E. Laming Evans.—This girl was aged 17 years. At the age of two she developed an arthritis of the right knee, in which flexion deformity was a prominent symptom. She had been treated in several hospitals by various methods, but the flexion remained. A recent slight injury necessitated rest in plaster-of-Paris in a general hospital. The knee was now flexed at an angle of 20°, the ankylosis being fibrous and a very small range of movement remaining. X-ray examination showed that the epiphyseal cartilages were synostosed. In the external condyle of the femur there was a translucent area suggesting an old abscess. The joint line was hazy, and showed an obliquity downwards and inwards from collapse of the external condyle.

Case of Traumatic Myositis Ossificans.—Mr. W. T. Gordon Pugh. —About eight weeks ago the patient, a boy, aged 15 years, whilst playing in a gymnasium, caught his foot in a mat and fell sideways on to his hand, dislocating the left elbow. This appeared to have been completely reduced without an anæsthetic. Cold compresses were applied and the arm slung in a flexed position. About a fortnight later, the doctor, finding that any attempt at movement caused pain, administered chloroform, moved the joint, and fixed the elbow in an extended position upon a splint. For a few days the elbow was flexed and extended several times each morning, but the movement possible became steadily less in extent and more painful.

When he was admitted to hospital a few days ago the arm was fixed with the elbow within 40° of full extension, and the forearm in a position midway between pronation and supination. There was considerable swelling around the elbow, due chiefly to a firm thickening, extending from the olecranon upwards for about 3 in., and to a similar thickening in front of the joints. X-ray examination showed considerable areas of opacity in positions corresponding to the triceps, brachialis anticus and supinator brevis.

The history was that usually associated with a traumatic myositis ossificans, and the treatment must evidently take the line of securing absolute rest, so as to prevent the development of additional new bone and to assist the absorption of that already present. In the presence of such extensive alterations from the normal an ultimate stiffness of the joint seemed not improbable, and it was therefore advisable to get the elbow into a standard position for fixation.

Scoliosis of Uncertain Origin.—Mr. P. Maynard Heath.—The patient was a girl, aged 10 years. She had a fall in the playground in 1918; the accident was apparently trivial, but no details were available. Very little notice was taken of it, and the child was not incapacitated. Some months later the mother noticed that the back was not straight.

In the erect position there was very little abnormal to be seen, but when the spine was flexed the whole trunk was carried clearly to the left. At the same time rotation occurred, so that the right lumbar region became prominent, and a secondary curve, convex to the left, was produced in the dorsal region. Flexion of the spine directly forwards or to the right was impossible. There were no nervous symptoms, and the condition was not progressive. The hip-joints and lower limbs were normal, and there was no evidence of abscess formation. The deformity of the spine was obviously due to some lesion in the lower lumbar vertebræ. X rays showed that the articular processes between the fourth and fifth lumbar vertebræ on the left side were apparently fused into a structureless mass of dense bone, and that the fourth lumbar vertebra was set obliquely upon the fifth. No fracture of the articular processes could be seen. There was a deficiency in the laminæ of the fifth lumbar vertebra, and its left transverse process was longer than the right, and came into contact with, and was possibly joined to, the left lateral mass of the sacrum. The bodies of the vertebræ were normal in outline, and no rarefaction of bone was visible. The X-ray appearances might be due to fracture, congenital abnormality, or caries.

If the cleft in the laminæ of the fifth lumbar vertebra was due to fracture, it was possible that the articular processes between the fourth and fifth lumbar vertebræ had been fractured and had subsequently fused. The slightness of the accident was somewhat against this view. On the other hand, the increase in size of the left side of the fifth lumbar vertebra was clearly developmental, and suggested that the cleft in the laminæ of that vertebra and the condition of the affected articular processes were also developmental. Caries seemed improbable, in view of the symptoms and X-ray appearances. The child had been treated for six weeks in a plaster jacket by another surgeon. Since then she had been given exercises and massage, with improvement in her comfort and general health, but without any influence on the lateral deviation of the spine.

Abstracts from Current Literature.

Diseases of the Alimentary System.

Dental sepsis in children (*'Lancet,'* 1920, i, *p.* 303).—**F. St. J. Steadman** attributes retarded mental and physical growth, malnutrition, anæmia and loss of sleep to carious teeth. Gastro-intestinal disorders are common. Glands in the drainage area of decayed teeth become readily enlarged on trifling injury, become fibrosed and eventually tubercular. Sepsis in deciduous teeth causes hypoplasia of the permanent set. Carious teeth, by disuse, set up gingivitis which affects the periodontal membrane of the permanent tooth. Steadman advocates wholesale extraction of deciduous

teeth in which the pulp is infected. Sterilising and capping the pulp is unsound practice, for the pulp eventually suppurates and dies under the filling, with the result that the teeth remain tender and are not used for mastication. The antagonist should also be removed, for it is functionless and *débris* collects round it, causing gingivitis. In cases in which the four lower deciduous molars are carious and the first upper but not the second, the latter (in children under six) are left in position until the permanent molars have erupted and occluded. As a general rule extraction of teeth does not adversely influence the growth of the jaw, and extraction from one side or from the upper and not from the lower jaw does not lead to a lop-sided appearance or inferior or superior protrusion. Another argument is that early extraction of the deciduous teeth leads to forward movement of the six-year-old molar, thus causing crowding and irregularities later on. If the teeth are extracted before the permanent molars this will take place, but can be met by extracting one of the permanent teeth in each corner of the mouth. These teeth may be either the four six-year-old molars or the four premolars. If extraction takes place after the permanent molars have occluded there will be little forward movement. The author complains bitterly of the hostility of the medical profession to radical dental treatment.

CHRISTOPHER ROLLESTON.

Influence of diet on teeth-formation (*'Lancet,'* 1918, II, *p.* 767).—**M. Mellanby** carried out an investigation with the object of studying (1) the factors involved in the development of sound teeth and of the growth of the jaws in relation to the size of the teeth; (2) the factors bearing on the immunity of erupted teeth to caries and other diseases. The results may be summarised as follows: (1) A diet containing in abundance those articles with which the fat-soluble A accessory food factor is associated, *e. g.* cod-liver oil, butter, etc., allows the development in puppies of sound teeth. (2) A diet otherwise adequate but deficient in the substances with which fat-soluble A is associated brings about the following defects in puppies' teeth: (*a*) delayed loss of deciduous teeth; (*b*) delayed eruption of the permanent dentition; in some cases the delay in the eruption of the permanent teeth is more marked than the delay in the loss of the deciduous teeth; (*c*) irregularity in position and overlapping, especially of the incisors; (*d*) partial absence of or very defective enamel; (*e*) low calcium content—the deficiency in calcium salts may result in the teeth being so soft that they can be cut with a scalpel. (3) The evidence makes it clear that this is an instance of diet affecting the teeth from the inside and is independent of bacterial sepsis and other oral conditions associated with food. (4) These results cannot be considered as being due to acute illness or "malnutrition," for (*a*) the improvement to the teeth by the addition of fat-soluble A containing substances (animal fats, etc.) is as characteristic as the deleterious effect of a deficient diet; (*b*) there is evidence that the defective teeth are most pronounced in the rapidly growing puppies, and it is difficult to associate rapid growth with illness or "malnutrition" as generally understood. (5) This work, taken in conjunction with the experiments of E. Mellanby on rickets, puts the close relationship between hypoplastic teeth and rickets on to an experimental basis.

J. ALLAN.

Abnormal conditions of enamel in cases of malnutrition (*'Lancet,'* 1918, II, *p.* 456).—**J. L. Dick** points out that there are many abnormalities to be found in the enamel of teeth in cases of malnutrition, *e. g.* hypoplasia,

honeycombed teeth, horizontal bands of thickened enamel and transverse grooves in the enamel, chalky appearance of the enamel, and brown lines of Retzius. Of 281 poor-class children examined, 114, or 40 per cent., had defective enamel, as compared with 13 per cent. among better-class children. It is important to note that in hypoplasia and in cases where the chalky patches and the brown lines of Retzius were found the teeth which suffered chiefly were—(1) the central incisors, (2) the lateral incisors, and (3) the canines, in this order of frequency. The calcification of the enamel of the crowns of these teeth goes on during the first two years of the child's life, so that these defects are due to errors of nutrition affecting the child at this early period when the rate of growth, and notably that of the brain, is relatively enormous. Rickety conditions are especially operative at this period. J. Allan.

Pharyngeal spasm simulating loss of appetite in children (*'Paris méd.,'* 1919, II, *p.* 449).—**E. Weill** has frequently found that a spasm of the pharynx is the cause of a child refusing its food. The condition is most frequent between the ages of 2 and 5 years, but it may occur as early as 18 months or as late as 9 years. It is found both in boys and girls. It is sometimes, but not always, associated with nervous antecedents. It may first appear after weaning, or occur at a later stage when the child has been put on ordinary diet. Sometimes it develops at a relatively advanced age after an attack of influenza, whooping-cough or erythema nodosum. It is either continuous or attended with slight remissions. It may last for years, ordinary treatment not causing any change. Weill has found that the most effective cure is the passage of a rubber catheter. A single *séance* may be sufficient, but in some cases the instrument may have to be passed two or three times at intervals of a few days. In cases in which catheterisation is refused, cold compresses should be applied to the front of the neck for thirty to forty minutes, the compresses being renewed every ten minutes, followed by massage of the floor of the mouth and suprahyoid region. During a meal, if the child is slow in swallowing, the finger should be pressed upon the trachea when the sensation of suffocation produces a movement of deglutition. J. D. Rolleston.

Congenital stenosis of the œsophagus (*'New York Med. Journ.,'* 1918, CVIII, *p.* 109).—**H. Apfel** records a case in a girl, aged 3 years, who was in all respects a healthy child, but had always vomited once or twice daily after meals. X-ray examination showed a marked degree of narrowing of the lower end of the œsophagus with a great dilatation immediately above it. Another child, a male, aged 7 days, weighing 7 lb. at birth, vomited after attempts to nurse. When seen it weighed only 4 lb. and was very emaciated. A catheter would only pass 5 in. A barium meal was seen by the X rays to stop at the level of the fifth cervical vertebra. A gastrostomy was done but the infant died two days later.
J. Porter Parkinson.

Congenital stricture of the œsophagus (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 144).—**T. L. Morse** records three cases of this condition. The first two were brothers aged 6 years and 25 months respectively. The eldest child was breast-fed and seemed well in every way until an attempt was made to feed him when he was one year old. It was then found that

he could not take solids without vomiting; he was therefore nursed until he was 2½ years old. Since then he had been able to take liquids and soft solids, but no solid food. Skiagrams showed an enlargement of the œsophagus at the sterno-clavicular area, and on œsophagoscopy an obstruction was found 6 in. from the incisor teeth, and some constriction at 7 in. and onwards. The stricture was dilated and the vomiting ceased. Further dilatation would be necessary. In the younger child the vomiting had occurred four or five times a day ever since birth. A skiagram showed a narrowing of the lower third of the œsophagus, with dilatation above. A stricture was found on œsophagoscopy, 17·5 cm. from the incisor teeth. Dilatation was considered inadvisable and gastrotomy was done. Death took place a week later. The third case was in a girl, aged 3 years, who began to vomit soon after birth, the vomiting occurring immediately after food. There were long intervals in which she did not vomit milk or any liquid food, but she always vomited solid food. Œsophagoscopy showed a stricture 7½ in. from the incisor teeth. There was no marked dilatation above the stricture. Bougies were passed up to No. 16. She was dilated repeatedly, and after eight months' treatment had no symptoms.

J. D. Rolleston.

The education of the organic functions of infancy ('*Med. Press.*' 1919, 1, *p.* 219).—**E. Pritchard** deals with the education of the digestive functions in infancy. It is very important to set the various neuro-muscular mechanisms in motion in the right way at the beginning of life. The team work of the various groups of muscles concerned in the motor functions of the alimentary tract can only be perfected by constant repetition under the best possible conditions. Good habits of action can be acquired just as easily as bad ones, provided that the right experience and practice are afforded. The author indicates some of the directions in which faulty action of the motor mechanism of the stomach, etc., may prove hurtful. J. Allan.

Appendicitis in children ('*New York Med. Journ.*,' 1918, cviii, *p.* 501).—**J. O. Bower** calls attention to the difficulty of diagnosis in young children. At the Samaritan Hospital the percentage of cases without peritonitis necessitating using a drainage-tube was only 10 and the mortality was four times that of the adult. In children appendicitis is often associated with infectious diseases, such as influenza, measles, acute rheumatism, tonsillitis or typhoid fever. Foreign bodies, fæcal concretions and intestinal parasites are more often found than in adults. The symptoms are the same as in the adult. A high leucocyte count is of great value when pneumonia is excluded. Ptomaine poisoning resembles appendicitis, but shows diarrhœa rather than constipation, absence of leucocytosis, and the vomiting ceases after stomach lavage. Acute pyelitis is distinguished by a careful examination of the urine. Intussusception produces blood-stained mucous stools, no leucocytosis or fever and no abdominal rigidity. Pneumonia may be diagnosed, but its symptoms and signs ought to prevent this. The writer mentions cases of acute perforation of the stomach and acute pancreatitis resembling appendicitis. Abdominal tuberculosis is present in 90 per cent. of the cases in which appendicitis is diagnosed in a child who has had previous similar attacks.

J. Porter Parkinson.

Congenital defects in the lower bowel recurring in three successive children in one family (*'Med. Journ. Austral.,'* 1919, I, *p.* 216).—**A. L. Walker.**—In two cases, a male and female child, great abdominal distension occurred shortly after birth. Laparotomy showed absence of the large intestine. Death occurred in twenty-four and eighteen hours respectively. The third case died soon after birth. A blind end in the rectum was found less than 5 cm. from the anus. Operation was refused. F. R. B. Atkinson.

Case of congenital megacolon (*'La Pediatria,'* 1919, XXVII, *p.* 513).—**A. Dalla Valle** reproduces the description of a specimen in the Museum at Parma by G. Inzani in 1882, which is identical with cases which Hirschsprung first published in 1888 of the disease with which his name is associated. A boy, aged 5 years, had obstinate constipation since birth, from fifteen to twenty days elapsing between the evacuations, the abdomen progressively enlarging to 82 cm. in girth. At the autopsy the circumference of the colon was 37 cm., the upper part contained gas and the lower part a hard fæcal mass weighing 125 grm. together with some loose fæces. The mucous membrane was reddened and the follicles turgid and hard. The mucosa of the small intestine was normal, the peritoneum smooth and containing 100 grm. of clear serum. Vincent Dickinson.

Dilatation of the colon in children (*'Amer. Journ. Dis. Child.,'* 1920, XIX, *p.* 169).—**A. E. Meyers** believes that in addition to muscular hyperplasia there is another condition concerned in dilatation of the colon in children, viz. spasm due to an excess of starch in the diet. He reports six cases in children aged from 4 to 9 years, in whom constipation was cured by a starch-free diet and the administration of atropine sulphate, 5 drops being given thrice daily, each drop containing $\frac{1}{1000}$ grm.
J. D. Rolleston.

Prophylactic treatment of constipation in children (*'Lancet,'* 1919, I, *p.* 459).—**V. Borland** emphasises the importance of cultivation of regular habits from earliest infancy. Feeding times should be regular. The bowels tend to move more readily after a feed, and advantage of this should be taken by training the child into the habit of a morning stool after the bath feed. If there is any tendency to constipation a little gentle abdominal massage may be useful. Constipation in the mother should always be treated. The author warns against the use of the binder after the navel has healed. The improper use of castor oil for children is discussed. Careful attention to dieting is very necessary. J. Allan.

Diseases of the Nervous System.

Little's syndrome (*'La Pediatria,'* 1920, XXVIII, *p.* 72).—**A. F. Canelli** gives details of two cases, the first of a man, aged 33 years, in whom the disease dated from the age of 4 months, starting from an attack of afebrile convulsions, the other in a boy, aged 11 months, the onset probably arising during the early months of extra-uterine life. In both cases syphilis was excluded. Besides contractures of the limbs there were, in the first case, left-sided kyphoscoliosis, idiocy, bilateral atrophy of the face and strabismus; in the second, defective intelligence and bilateral blindness. In the first

case the affection of the limbs was limited to the lower extremities, while in the second the arms were also involved with increased reflexes, this extensive paresis being rare in genuine Little's disease. There was no myocarditis in either case. In the first case there were large subdural hæmatomata, diffuse adhesive pachymeningitis and chronic thrombo-sinusitis; in the other, cerebral hæmorrhages, chronic cerebral meningitis and thrombo-sinusitis. In both there was marked hydrops ventriculi, hypoplasia of the nerve-cells and compression of the pyramidal tracts; the lesions were more conspicuous in the brain than in the spinal cord. Both were probably the result of an infective process. VINCENT DICKINSON.

Infantile spastic paraplegia (*'La Pediatria,'* 1920, XXVIII, *p.* 257).—**R. Vaglio** records 46 cases of infantile spastic paraplegia which were observed from 1913 to 1918 at the Naples University Pædiatric Clinic. One was due to trauma at birth, in 25 syphilis could be incriminated (in 19 with certainty, in 6 with great probability), in 3 the cerebral lesion was connected with measles, 4 were associated with whooping-cough, influenza, typhoid and empyema respectively, and in 12 the origin could not be determined. A certain proportion of the latter were possibly due to Heine-Medin's disease, and in others the possibility of cerebral lesion of a tuberculous nature could not be excluded. In 26 cases the paralysis was preceded and generally accompanied by convulsive attacks often of a definitely epileptic character. The lesion affected the two limbs on one side almost completely in 16 cases, in 22 it was most pronounced in the upper limb and in only 8 in the lower limb. In 27 cases the right side was affected and in 19 the left side. Only 6 cases were associated with mental disturbances, varying from the severest forms of idiocy to a mere retardation in intellectual development. In only 2 cases were athetotic movements present and in 1 choreic movements of the affected limbs. The onset was sudden in 29 cases and gradual in 16. J. D. ROLLESTON.

Syringomyelia in infancy (*'La Pediatria,'* 1920, XXVIII, *p.* 226).—**G. di Giorgio** describes two cases in children, aged 9 years, both of whom presented trophic changes in the skin and subcutaneous tissue, changes in thermic and painful sensation, and amyotrophia and motor disturbances. There were facial hyperidrosis and dermographism in one case and also the "succulent" hand described by Pierre Marie and Marinesco. The diagnoses of muscular dystrophy, polyneuritis, amyotrophic lateral sclerosis and hæmatomyelia were negatived in both cases. The influence of traumatism in the first case was not sufficient to admit the possibility of it as a causal agent. VINCENT DICKINSON.

Boveri's reaction in the cerebro-spinal fluid (*'Riv. di Clin. Pediat.,'* 1919, XVII, *p.* 113).—**A. Bardisian** writes on Boveri's reaction for detecting pathological conditions of the cerebro-spinal fluid. He performs the test by taking 1 c.c. of cerebro-spinal fluid and adding to it very gently 1 c.c. of a 10 per cent. solution of potassium permanganate. He first notices the "zone" of junction of the two fluids. In some cases the permanganate is reduced at once in the zonal layer. This constitutes a positive reaction. If this does not occur he mixes the fluids. After an interval the permanganate is reduced and the solution becomes yellow. He classifies the reactions into strong, medium, or weak, according to the interval required for the reduction, *i. e.* 2–3 minutes, 3–4 minutes and 5–6 minutes respec-

tively. He finds that the reaction does not correspond accurately to the presence of lymphocytes in the cerebro-spinal fluid. He obtains the strongest reactions in the case of myelitis. He quotes several cases in detail where children suffering from well-marked symptoms of meningitis gave a negative reaction and afterwards proved to be suffering from broncho-pneumonia or enteric fever. The article concludes with a long list of cases of this nature showing a negative result in acute fevers, pertussis, gastro-enteritis and other conditions. He states that the presence of a small quantity of blood in the cerebro-spinal fluid does not interfere with the test, and also that he has not got a positive reaction in every case in which the "Nonne-Apelt" reaction was positive. SIDNEY NATHAN.

Case of streptothrix meningitis (*'La Pediatria,'* 1920, XXVIII, *p.* 504).—**S. Fabris** describes the case of a male infant, aged 9 months, the subject of congenital syphilis, who in the course of a broncho-pneumonia presented symptoms of meningitis. Lumbar puncture showed besides increased tension a slight leucocytic reaction and the presence of streptothrix. In the absence of further opportunity for observation it was impossible to decide whether the case was one of secondary infection to a pre-existing broncho-pneumonia, or whether the whole clinical picture, meningeal and pulmonary, was due to the streptothrix. VINCENT DICKINSON.

Recovery in a case of influenzal meningitis (*'Med. Journ. Austral.,'* 1920, I, *p.* 104).—**W. F. Litchfield** has seen only one case of this kind recovered, viz. in a girl, aged $1^{11}/_{12}$ years. The influenza bacillus was cultivated from the cerebrospinal fluid obtained by lumbar puncture.
F. R. B. ATKINSON.

Two cases of bulbar paralysis in children (*'La Pediatria,'* 1920, XXVIII, *p.* 408).—**F. Amenta** describes two cases in children of 7 and 10 years of age. All the symptoms described by Duchenne were present, viz. motor and amyotrophic phenomena, disturbances of speech, deglutition, respiratory and cardiovascular systems, and in one case deafness.
VINCENT DICKINSON.

Encephalitis lethargica (*'Dub. Journ. Med. Sci.,'* 1920, *Fourth Series*, 1, *p.* 24)—**G. E. Nesbitt** reports a case in a boy, aged 15 years, who was admitted to hospital in a completely unconscious condition. Recovery took place. J. ALLAN.

Two cases of encephalitis lethargica (*'La Pediatria,'* 1920, XXVIII, *p.* 307).—**O. Cozzolino** describes these cases, aged 6 and 8 years. In the first there were the classical symptoms of headache, fever, somnolence, ptosis, strabismus, facial paresis, slow utterance and choreiform movements of the limbs. The second was an example of the polymorphism of the disease. There was isolated paresis of the trochlear nucleus with consequent turning of the eyeballs outwards and downwards—a phenomenon not usually observed in lethargic encephalitis, in which the oculomotor nerve is generally affected with consequent ophthalmoplegia externa and ptosis. VINCENT DICKINSON.

Treatment of epidemic encephalitis (*'La Pediatria,'* 1920, XXVIII, *p.* 319).—**S. Maggiore** treated nine children with a vaccine prepared from young cultures of Pfeiffer's bacillus in progressive doses. He claims as a

result : modification in the intensity of the lethargy, cardiovascular and ocular symptoms, early return of sensibility and reflex activity, rapid defervescence by crisis, or by lysis in cases with hyperpyrexia or sub-febrile temperature, and progressive diminution of the albumin in the cerebro-spinal fluid. He concludes that the disease is influenzal in nature and that the vaccine acts by immunity, or if the disease is not influenzal, that the vaccine acts by means of protein-therapy. VINCENT DICKINSON.

Two cases of musculo-spiral paralysis of malarial origin (*'La Pediatria,'* 1920, XXVIII, *p.* 497).—**F. Fonzo** describes the case of a girl, aged 7 years, who developed weakness in the right hand after an attack of tertian fever. The right hand was held in a position of flexion to almost a right angle with the forearm, which was also held slightly flexed on the arm. All movements of the forearm were possible, those of the hand limited, especially extension. Objects were grasped with difficulty. All passive movements were full and free, and there was no spasm or loss of sensation. There was slight atrophy of the palm, interossei and fingers. The second case was that of a boy, aged 12 years, who about twelve days after a malarial attack developed slight flexion of the fingers and thumb of the right hand with adduction. Active movements of extension of fingers and abduction of the thumb were impossible. Active pronation and supination were intact. Passive movements were normal as well as cutaneous sensibility.

VINCENT DICKINSON.

The ætiology of chorea (*'New York Med. Journ.,'* 1919, CIX, *p.* 265).—**S. Graves** and **B. H. Paige** state that evidence accumulates to indicate that chorea is the result of bacterial infection. They consider the embolic theory of Kirkes is not comprehensive enough. Morret Floyd tested the cerebrospinal fluid and bacteriologically the results were always negative, as also were blood-cultures. From one case a streptococcus was obtained which produced in rabbits endocarditis and lesions in the brain and meninges like those found in cases of chorea. The writers make no mention of the researches of Poynton and Paine, and they conclude that chorea is due to the action of bacterial toxins, perhaps a selective action, upon central nerve-cells in persons whose inherited nervous instability makes them more readily subject to such toxic action. J. PORTER PARKINSON.

The ætiology of Sydenham's chorea (*'La Pediatria,'* 1919, XXVII, *p.* 579).—**P. Foti** tested the Wassermann reaction in 17 cases : in 13 the reaction was positive, in 3 there were other clinical manifestations of syphilis, and in 1 only could it be excluded with any certainty ; this makes a percentage of 95. The author concludes that syphilis is not a determinate, but the principal predisposing cause. VINCENT DICKINSON.

Re-education in the treatment of chorea (*'New York Med. Journ.,'* 1919, CIX, *p.* 842).—**M. Grossman,** in addition to the ordinary treatment, recommends this method: Beginning when the fever has passed off, diaphragmatic breathing should be practised, as it helps to relaxation of the muscles. Passive movements of the muscles of the arms, legs, face, etc., should be done till the muscles relax. Later active movements are begun, simple movements regulated by counting, then movements resisted by the operator. When all these can be done satisfactorily in the prone position education in standing and walking is given.

J. PORTER PARKINSON.

Diseases of the Urogenital System.

convulsions in nephritis, and also for the cardiac dilatation, gallop rhythm and enlargement of the liver seen in acute nephritis. The treatment is to diminish the hypertension by bleeding, and restriction of fluids.

J. Porter Parkinson.

The bone deformities of renal dwarfism (*'Lancet,'* 1920, I, *p.* 18).—**H. Barber** has observed eight cases of renal dwarfism amounting in some instances to true infantilism associated with interstitial nephritis. Development was fairly normal until five or six years of age, after which growth was very much retarded. Bone deformities, which occurred in five cases, appeared to develop about the age of puberty. In type the changes appeared to be very similar to those of rickets. The wrists and knee-joints were most noticeably affected, but some swelling was palpable at the junction of the ribs and cartilages. Genu valgum was present in four cases.

J. D. Rolleston.

A rare case of hydronephrosis in a child (*'La Pediatria,'* 1919, XXVII, *p.* 590).—**N. Laverone** reports a case of hydronephrosis in a boy, aged 4 years, secondary to cicatricial stenosis of the ureter caused by a calculus. The enlargement of the abdomen and the removal of a clear, colourless and non-albuminous fluid by paracentesis at first gave rise to the diagnosis of echinococcus cyst of the spleen. Nephrectomy was followed by recovery.

J. D. Rolleston.

Colon bacillus pyonephrosis in early infancy (*'New York State Journ. Med.,'* 1919, XIX, *p.* 373).—**F. Williams** is of opinion that the colon bacillus has high pathogenicity for the kidney substance in young infants, in whom the activities of this organism are less inclined to be limited to the pelvic portion. There is evidence at hand that this infection claims a much higher mortality among the very young than is the case in older children. It is evident, also, from cases reported in literature, that in early infancy males are frequent victims, and that the generally recognised preponderance of female cases does not obtain in the very young. J. Allan.

Three cases of malignant tumour of the kidney (*'Riv. di Clin. Pediat.,'* 1919, XVI, *p.* 619).—**F. Rossi** reports three cases: (1) A boy, aged 2 years, in whom the growth was a large sarcoma and could not be removed by laparotomy owing to numerous tough adhesions, death taking place a week later. (2) A boy, aged 2 years. The prominent symptom was anæmia with hæmoglobin 60 per cent., polynuclears 78 per cent., eosinophils 1 per cent., lymphocytes 16 per cent. The urine was acid with a faint haze of albumin. The renal tumour occupied the splenic region, and was successfully removed by operation; histologically it was a round-celled sarcoma. (3) A girl, aged 8 years, with an ovoid tumour in the left hypochondrium, not moving with respiration. The urine was acid, with a trace of albumin. Blood-count—82 per cent. neutrophil polymorphonuclears, lymphocytes 7 per cent. The tumour was successfully removed.

Vincent Dickinson.

Congenital stenosis of both ureteral orifices (*'Journ. of Urol.'* 1920, IV, *p.* 123).—**I. M. Wason.**—A poorly nourished male infant, aged 7 months, was admitted to hospital for diarrhœa, and died fourteen days later without any physical signs. At the necropsy double hydronephrosis was

found with dilated tortuous ureters, which ended in cystic dilatations in a small bladder. Microscopical examination showed that the ureteral orifices, which were not visible to the naked eye, were stenosed, measuring only $\frac{1}{8}$ to $\frac{1}{9}$ mm. in diameter. There was also a valve in the prostatic urethra, extending from the lower end of the veru montanum to the right urethral wall. Though valve formation in the lower prostatic urethra is probably the commonest cause of double hydronephrosis in children, in the present case the valve, being unilateral, did not cause sufficient obstruction to the flow of urine to produce dilatation of the upper prostatic urethra and of the bladder. The dilatation of the ureters and hydronephrosis were due to the stenosis of the ureteral orifices, which were possibly the result of a partial overgrowth of epithelium and muscle in embryonic life.

J. D. Rolleston.

The pathogenesis of essential enuresis (*'La Pediatria,'* 1919, xxvii, *p.* 567).—**U. Provinciali** describes ten cases in which careful radiological examinations were made. The majority of cases showed deformities of the lumbo-sacral portion of the vertebral column. In only a small percentage were there any other degenerative stigmata. Since the syndrome disappears usually in the course of time, it remains to be proved whether the anatomical lesion becomes modified or lessened at the same time. It must be admitted that, corresponding to an anatomical change in the lumbo-sacral segment there is a dysplasia, hitherto unrecognised, of the spinal cord corresponding to the urinary centre. Spiller's idea that traumatism, dragging, or osseous lesions can directly influence the radicular processes is not admissible. The author expresses the hope that these preliminary observations on the anatomical substratum of a disease hitherto considered entirely functional may stimulate further researches in this affection.

Vincent Dickinson.

Urethral polypus (*'Nederland. Tijdschr. v. Geneesk.'* 1919, ii, *p.* 2114).—**G. O. E. Lignac** reports a case in a boy, aged 9 years, who presented a mushroom-shaped growth protruding from the urinary meatus. The patient suffered from frequent erections of long duration and difficulty in micturition. On removal, the polypus was found to be a fibroma. Death took place about a month after the operation.

J. D. Rolleston.

Primary sarcoma of the prostate (*'Brit. Med. Journ.,'* 1919, i, *p.* 378).—**F. Nicholson** and **E. M. Hainworth** report a case in a boy, aged $3\frac{1}{2}$ years. The growth was removed, but recurrence soon took place with fatal result.

J. Allan.

Reviews.

THE DISEASES OF INFANTS AND CHILDREN. By J. P. CROZER GRIFFITHS, M.D., Ph.D., Professor of Pædiatrics in the University of Pennsylvania, etc. With 436 illustrations, including 20 plates in colours. Vol. II. Philadelphia and London: W. B. Saunders Company, 1919. Price 72s.

THE object of the writer, whose name is well known to readers of this Journal, has been to present a review of the subject of medical pædiatrics as complete as seemed desirable without attempting to make it encyclopædic. We have no hesitation in saying that Dr. Griffith has admirably fulfilled his task, and congratulate him on having produced the most complete and up-to-date text-book on children's diseases in the English language, and one which may challenge comparison with any system of pædiatrics by English or foreign writers. The work, which consists of two volumes containing an aggregate of about 1500 pages, is well printed on excellent paper and lavishly illustrated. Each volume possesses a separate index and the second volume a general index as well.

A quarter of the first volume is devoted to the consideration of general subjects, including the anatomy and physiology of early life, the feeding of infants and children, symptomatology and diagnosis, morbidity and mortality, and the therapeutics of early life. The chapter on anatomy and physiology contains useful tables of the weights and measurements of children, the metric and English system being both employed, as throughout the work. In the chapter on breast-feeding Dr. Griffith expresses the view that an interval of four hours between the feeds may be too great, and that the shorter intervals which have so long been in vogue should not be too readily abandoned. In a criticism of the caloric method, he states that its greatest disadvantage is the tendency of the physician to take too little account of the relative assimilability of the food elements, and to regard it as a matter of indifference which is employed so long as the food contains sufficient calories. A chapter is devoted to special mixtures with personal names, mostly of foreign origin, and proprietary foods, the employment of which Dr. Griffith regards as one of the most pernicious factors of the time in the feeding of infants. The author's attitude to the therapeutic value of alcohol is shown by his statement that it is given far too frequently by many physicians and in absolutely small amounts by others.

In the description of the various diseases the author's own wide experience is supplemented by numerous quotations from the literature, the references to which are supplied in a uniform bibliographical style at the foot of the page. J. D. R.

MALARIA AT HOME AND ABROAD. By S. P. JAMES, M.D., D.P.H (Lieut.-Colonel I.M.S., retired). Illustrated with one coloured map and 104 full-page and text-figures. London: John Bale, Sons & Danielsson, Ltd., 1920. Price 25s. net.

THE present work, we learn from the preface, is intended as an elementary guide to medical men and administrators who have to deal with malaria at home or abroad during peace or war. The parasitology, symptomatology, diagnosis, prevention and treatment of the disease are fully considered, and

special chapters are devoted to the study of mosquitoes and epidemiological observations in England and the tropics. Of special interest to readers of this Journal are pp. 150 *et seq.*, on malaria in children. Colonel James negatives the view that children suffer less severely from malaria than adults, and points out that in highly endemic localities the death-rate among infants and children under five or six years is very high, while those who on superficial examination appear to be healthy have become tolerant after repeated attacks. In Macedonia the symptoms of malignant malaria in children are often atypical, and mainly consist of gastro-intestinal disturbance. The temperature ranges between 102° and 103° F., with very short periods of remission and intermission, so that the chart may show an almost continuous fever. Death may result from acute primary cachexia, but many survive with chronic splenomegaly. It is interesting to note that among the civilians who contracted malaria in England between 1917 and 1919, no fewer than 75 per cent. were children. In the great majority the manifestations were quite typical, but more severe than in most of the indigenous cases in adults. Reference is made to Lieut.-Col. Wilkinson's observation that in England, as in the tropics, the examination of school-children is one of the most valuable means of ascertaining the existence and prevalence of malaria in a locality. Thus in October, 1917, thirty-eight children of the Queenborough Urban and Sheppey Rural Districts were examined, and four, or 10·5 per cent., showed benign tertian parasites in the blood. An instructive list on p. 176 of some provisional diagnoses made in England and other non-malarious centres in regard to cases subsequently proved to be malarial shows that malaria may frequently be mistaken for other conditions commonly met with in children, such as anæmia, debility, convulsions, epilepsy, jaundice, rheumatic fever, valvular disease of the heart, and worms. The book is well printed and illustrated, and most readers will endorse Sir Patrick Manson's foreword that it is "a fine performance, which is bound to do an immense amount of good." J. D. R.

Defective Housing and the Growth of Children. By J. Lawson Dick, M.D., F.R.C.S., Administrative Deputy Commissioner of Medical Services, Ministry of Pension, County of London. London: George Allen & Unwin, Ltd., 1919. Price 3s. 6d. net.

The present inquiry was suggested to the author by a research into speech defects amongst school-children. He found amongst these delayed physical and mental development. Rickets proved to be the prevailing defect from which these children suffered, and for this defective housing was largely responsible. After discussing the stigmata of this disease and dwelling especially at the teeth in rickets, the author goes on to consider the mental development in rickets, and states that the mental condition improves as the child grows older. He suggests that rickets in the growing child may be regarded as a phase of hypothyroidism. Defective housing and overcrowding are the essential factors in the production of rickets. Such conditions will inevitably produce rickets whether the food be good or bad. Deficient feeding is only a contributory and aggravating factor. This book is really a plea for better housing of the working classes—a problem which the latter have themselves rendered extremely difficult to solve in these days. If the author has added but little to our knowledge he has at least drawn attention to some very important matters, and what he has written deserves to be carefully studied. J. B.

HOME EXERCISES FOR SPINAL CURVATURES. By RICHARD TIMBERG, M.R.C.S.Eng., L.R.C.P.Lond., G.D.Stockholm, Medical Officer, Physico-Therapeutic Dept., St. Thomas's Hospital, etc. Second edition. London: William Heineman (Medical Books), Ltd. Pp. 67. Price 6s. net.

THE subject of physical therapeutics has of late years attracted considerable attention and we therefore welcome the publication of the second edition of this practical little book. The author has set forth concisely and convincingly the case for home exercises in the treatment of spinal curvatures and allied deformities. After some brief remarks on the normal condition of the spine he discusses how spinal curvatures arise, and then considers the object of the exercises and what may be expected of them. A chapter is devoted to a full description of the various exercises, the text matter being elucidated by a series of excellent photographs. The author has in this edition added a chapter dealing with certain deformities of the feet that are often co-existing with spinal curvatures, and in an appendix he gives some directions for use of home exercises. This small book, which should undoubtedly serve a useful purpose, comes from the pen of one who has made a careful study of the subject. It contains information of the greatest practical value, and cannot fail to appeal to all interested in the physical development and well-being of the child. J. A.

CHORIO-EPITHELIOMA MALIGNUM. KLINISKE OG PATHOLOGISK ANATOMISKE STUDIER. MED-BIDRAG TIL BELYSNING AV CLÆREMOLÆNS OVERGANG TIL CHORIO-EPITHELIOM. Summary in English. By ANTON SUNDE. Pp. 280. Kristiania: Emil Mostue, 1920.

IN this monograph, which forms a supplement to the May number of the 'Norsk Magazin for Lægevidenskaben,' the writer discusses first the chances of the cure of chorio-epithelioma malignum by operation, and secondly the frequency with which hydatid mole is transformed into chorio-epithelioma malignum. The work is based on the study of 38 cases examined by the writer. Of these, 20 were inoperable on admission to hospital, and of the remaining 18, 12, or 66 per cent., were cured by operation, the patients having been kept under observation for an average period of eight years after the operation. These results show that the chances of recovery are good provided that the operation can be performed during the early stage of the disease—that is to say, during the first three weeks. Of 122 cases of hydatid mole who were kept under observation by the writer for periods varying from five to forty years, the average time being twelve and a-half years, only 6, or 5 per cent., subsequently developed chorio-epithelioma malignum.

The Norwegian text is accompanied by numerous tables and photographs of the naked-eye and microscopical specimens, so that with the aid of the English summary much valuable information can be obtained by those not familiar with Scandinavian. J. D. R.

TRANSACTIONS AND SEVENTH ANNUAL REPORT OF THE LONDON DERMATOLOGICAL SOCIETY. London: John Bale, Sons & Danielsson, Ltd. Price 2s. 6d.

THIS Society centres round the St. John's Hospital for Diseases of the Skin, and the 'Transactions' show what a wealth of excellent material is attracted to that institution. Members of the Society had the opportunity of exhibiting examples of many rare and interesting conditions. In addition several papers were read, and are herein included, the best of these being one on ulcers of the leg, by Dr. Prosser White, of Wigan, which is a real contribution to our knowledge of this distressing subject. The opening

address was pronounced by Dr. Leonard Williams, who spoke of the thyroid gland, and condemned stiff collars. The President of the Society in his address referred with pride to the fact that the X-ray treatment of ringworm had been practised at this hospital since its first introduction, and on the last page of the volume before us exhibited to the members a series of cases of X-ray dermatitis of the scalp following treatment for ringworm. *Verb sap.*

H. D.

Traitement des Arrêts de Croissance par le Dr. Maurice Springer, Ancien interne des hôpitaux de Paris à l'hospice des Enfants assistés. Paris: Baillière et fils, 1920. Price 3 fr.

This little book strikes a somewhat fresh note in infantile therapeutics. Treatment is discussed by means of opotherapy, and due note is taken of the influence of the thyroid and the thymus glands on growth. The importance of digestion and alimentation is emphasised, and the *régime* to be followed during early development is clearly indicated. Rules of alimentary hygiene are fully and explicitly set forth, and the importance of muscular exercise during early life is insisted on. Sections on hydrotherapy, climatic measures of treatment, electricity and drugs complete a volume replete with numerous useful facts. As regards drugs, the author has often observed good results follow the use of alkalis combined in the form of isotonic solutions if administered over a prolonged period. We most cordially recommend this little book as a guide to the treatment of backward children. Its pages contain many novel and useful suggestions. J. B.

Kinder-Tuberkulose: Ihre Erkennung und Behandlung. By H. Much. Small octavo, pp. 36, with two plates. Leipzig: Curt Kabitsch, 1920. Price 4m. 80pf.

This brochure on tuberculosis in children is written "aus der Praxis für die Praxis"—much more so than is usually the case with such a profession. It is like the conversationally dogmatic discussion that takes place at a meeting of specialist clinicians. Signs, symptoms, remedies, are not put in their text-book order, but given as the author himself rates them, and we are far from quarrelling with all such exclusion of the superfluous and the obvious. In hilus tuberculosis Much believes strongly in d'Espine's sign—"the best means of diagnosis next to the Röntgen plate." He gives several fallacies as seriously detracting from the value of a negative v. Pirquet. Of course most interest attaches to his claims for "granules" and for partigens. It will be remembered (incidentally it might very excusably *not* be remembered, because recently a prominent English pathologist wrote a big book on tuberculosis without mentioning either), that aberrant forms of tubercle bacilli, now called Much's granules, have been described by this worker, and that he is also responsible for tuberculins prepared from constituents of the bacillus of Koch; the fatty envelope, the albuminous content, and so on. He says that others have found granules in the lesions of erythema induratum and in phlyctenules, and recommends partigen treatment, although scarcely so strongly as the X-ray. Of course the size of the book precludes his dealing with bone and joint disease or scrofula. But on lung affections it is valuable and distinctly interesting, the more so from its conciseness. Much has written verses in his time, of what quality we know not; the fact of his literary practice tells however to advantage here, in that his "stuff" is easy reading. Too many medical works deserve Dr. Johnson's censure on Floyer—"His book for want of order is obscure."

W. C. R.